DOCUMENT RESUME

ED 028 239 VT 004 044

By-Rowe, Harold R.; Flitter, Hessel H.
Study on Cost of Nursing Education. Part 1: Cost of Basic Diploma Programs.
National League for Nursing, New York, N.Y.
Spons Agency-Public Health Service (DHEW), Washington, D.C. Div. of Nursing.
Pub Date 64
Grant-NU-00009
Note-108p.
Available from-National League for Nursing, 10 Columbus Circle, New York, New York 10019 ($2.00)
EDRS Price MF-$0.50 HC Not Available from EDRS.
Descriptors-Clinical Experience, Comparative Analysis, Cost Effectiveness, Educational Economics, *Health Occupations Education, *Hospitals, National Surveys, *Nursing, *Program Costs, Systems Approach

The cost analysis method developed in a National League for Nursing-Public Health Service study was adapted to determine the cost of nursing education in the sample of 126 hospital-supported programs in this study. Some of the findings were: (1) The median gross cost per student-year for educational functions was $1,100 and the median net cost (cost remaining after income intended for educational functions was subtracted) was $900, (2) The median gross cost per student-year for noneducational functions was $1,500 and the median net cost was $1,400, and (3) The median estimated value of students' clinical experiences was $750 per student-year. Separate sections of the report deal with sample selection methodology, gross costs to partner institutions, gross costs to parent institutions and cooperating agencies, real and derived income, and general comments on the cost of the program. Appendixes include explanation of the statistical methods used, a simplified example of the close-out method of cost analysis, schedules used to record cost analyses, and a listing of participating institutes. (JK)

ED028239

C.1

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE
PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS
STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION

STUDY ON COST OF NURSING EDUCATION

PART I

COST OF BASIC DIPLOMA PROGRAMS

VT004044

NATIONAL LEAGUE FOR NURSING
10 COLUMBUS CIRCLE, NEW YORK
1964

STUDY ON COST
OF
NURSING EDUCATION

PART I: COST OF BASIC DIPLOMA PROGRAMS

Prepared by

2 Harold R. Rowe
2 Hessel H. Flitter

Principal Co-investigators

This investigation was supported by Public Health Service Research Grant NU-00009 from the Division of Nursing, Public Health Service

3 NATIONAL LEAGUE FOR NURSING, New York, N.Y.

1964

Code Number: 19-1142

Price $2.00

CONTENTS

Page

FOREWORD v

PROJECT STAFF vi

ADVISORY COMMITTEE vii

SAMPLE OF DIPLOMA PROGRAMS 1
  Table 1. Number of Programs in the United States and Number Selected for Study, by Variable 1

METHODS USED IN THE STUDY 3
  Beliefs Expressed in Methods of Costing 3
  Methods for Analyzing the Costs of a Hospital-supported Diploma Program 3
  Methods Used in Statistical Treatment of the Data 6
  Example of Cost Analysis 7
    Table 2. Summary of cost analysis of one participating institution 8

GROSS COST OF DIPLOMA PROGRAMS TO PARENT INSTITUTIONS 9
  Relationship of Program Costs to the Fiscal Year of the Analysis 9
  Gross Cost of Educational Functions 14
  Gross Cost of Noneducational Functions 18
  Gross Cost of Educational and Noneducational Functions 22
  Significant Relationships between Variables and Costs to Parent Institutions 25
  Relationships of Combinations of Variables to Costs to Parent Institutions 25
  Relationship of Gross Cost to NLN Accreditation 27
  Relationship of Gross Cost to the Number of Cooperating Agencies Used 28
  Characteristics of the Most Costly and the Least Costly Programs 29
  Supplementary Table 33
    Table 3. Gross costs of diploma programs to parent institutions 35

GROSS COST OF THE TOTAL DIPLOMA PROGRAM 37
  Comparison of Total Program Costs with Costs to Parent Institutions 37
  Relationship of Variables to Cost of Nursing Education in Cooperating Agencies 37
  Supplementary Tables 45
    Table 4. Gross and net costs of diploma program courses given by cooperating agencies 47
    Table 5. Aggregate gross and net costs of diploma programs 49

REAL AND DERIVED INCOME 56
  Nature of Income 56
  Income to Parent Institutions 56
  Income Designated for the Total Program 59
  Derived Income: Professional Ability-usability Values 60
    Table 6. Net costs and derived income per student-week of diploma program 65

GENERAL COMMENTS ON THE COST OF DIPLOMA PROGRAMS IN NURSING 68
  Applicability of Findings 68
  Summary of Program Costs 68
  Observations on Variable Relationships 70

APPENDIXES

  A. Description of Statistical Methods Used in the Study 75
  B. A Simplified Example of the Close-out Method of Cost Analysis 77
  C. Schedules Used to Record Cost Analysis 82
  D. Participating Institutions 97
    Schools of nursing 97
    Cooperating agencies 99

LIST OF FIGURES

Page

Figure 1. Median Gross Cost of Educational and Noneducational Functions per Student-week to Parent Institutions, by Enrollment Size and Regional Subgroups 10

Figure 2. Median Gross Cost of Educational and Noneducational Functions per Student-week to Parent Institutions, by Type of Control and Number of Cooperating Agencies 11

Figure 3. Gross Cost of Educational Functions per Student-week to Parent Institutions, by Regional Subgroups 15

Figure 4. Gross Cost of Educational Functions per Student-week to Parent Institutions, by Type of Control 16

Figure 5. Gross Cost of Educational Functions per Student-week to Parent Institutions, by Enrollment Size Subgroups . . . 18

Figure 6. Gross Cost of Noneducational Functions per Student-week to Parent Institutions, by Regional Subgroups 19

Figure 7. Gross Cost of Noneducational Functions per Student-week to Parent Institutions, by Type of Control 20

Figure 8. Gross Cost of Noneducational Functions per Student-week to Parent Institutions, by Enrollment Size Subgroups 21

Figure 9. Gross Cost of Educational and Noneducational Functions per Student-week to Parent Institutions, by Regional Subgroups 22

Figure 10. Gross Cost of Educational and Noneducational Functions per Student-week to Parent Institutions, by Type of Control 23

Figure 11. Gross Cost of Educational and Noneducational Functions per Student-week to Parent Institutions, by Enrollment Size Subgroups 24

Figure 12. Gross Cost of Educational and Noneducational Functions per Student-week to Parent Institutions and to Parent Institutions and Cooperating Agencies 38

Figure 13. Median Gross Cost of Educational and Noneducational Functions per Student-week to Cooperating Agencies, by Type of Course 39

Figure 14. Total Income for Diploma Program per Student-week as Reported by 126 Parent Institutions 56

Figure 15. Percent of Cost of Diploma Program Met by Parent Institution 57

Figure 16. Estimated Weekly Value of Students' Clinical Experiences 61

Figure 17. Estimated Weekly Value of Student's Clinical Experience per Dollar of Net Cost of Educational and Noneducational Functions to Parent Institutions 64

FOREWORD

For many years, nursing leaders have been aware of the need for knowledge of the cost of nursing education. In 1937, the National League of Nursing Education, one of the National League for Nursing's three predecessor organizations, acted jointly with the American Hospital Association and the American Nurses' Association to establish a committee to study the cost of nursing education and nursing service. The study conducted by the committee was reported in 1940 by Pfefferkorn and Rovetta.[1] In 1952, the newly created National League for Nursing began to study ways and means to determine the cost of nursing education and to finance nursing education. By 1953, a working committee had been established, which in turn recommended that a study to develop a method for analyzing the cost of nursing education be undertaken. This study was realized through the joint efforts of NLN and the U. S. Public Health Service. When the resulting method was published, the working committee suggested that the method be used in an investigation of the cost of nursing education programs in hospitals, colleges, and universities. In 1958, the National Institutes of Health approved a research grant to support the investigation, and in 1961, it approved an extension of the grant.

The cost analysis method developed in the NLN-PHS study was adapted to determine the cost of nursing education in the hospital-supported diploma programs that participated in the present study. The cost centers and bases for prorating costs that are used for analyzing costs of these programs differ from those used for analyzing costs of nursing programs supported by colleges and universities. Cost centers in the hospital represent units that, for the most part, provide services for patients. Cost centers in the university or college represent units that provide services for educational programs. Because of this factor and other differences between hospital-supported diploma programs and baccalaureate and associate degree programs, it was thought appropriate to present this study in two parts. Part I, which follows, deals with findings pertaining to diploma programs. Part II deals with findings pertaining to those programs leading to a baccalaureate or an associate degree.

Space does not permit separate mention of the many persons, institutions, and agencies to whom thanks are due for their contributions to the study. Among the outstanding contributions are those of the many staff members of the participating institutions who supplied data needed for the cost analyses. The staff of the study is grateful also for the suggestions of the nursing educators, general educators, university and hospital administrators, comptrollers, cost accountants, statistical analysts, and researchers who served on the study's advisory committee and for those of the members of the Steering Committee of NLN's Division of Nursing Education. Especially noteworthy were the efforts put forth by the late Eleanor Helm in getting this investigation under way.

Hessel H. Flitter
Principal Investigator

New York
May, 1964

---

[1] Blanche Pfefferkorn and Charles Rovetta. Administrative Cost Analysis for Nursing Service and Nursing Education. Chicago, American Hospital Association, and New York, National League of Nursing Education, 1940.

PROJECT STAFF

Hessel H. Flitter, Principal Investigator

Harold R. Rowe, Co-principal Investigator and
Project Director

Florence Elliott, Past Director

Vivian Zane, Assistant Director

Alice Kohler, Past Assistant Director

Richard Mason, Cost Accountant

Walter Schaffner, Cost Accountant

Louis Breslow, Past Cost Accountant

Mary Elizabeth Bauhan, Consultant in
Public Health Nursing Costs

Fern Kamine, Statistician

Douglas Douthit, Secretary

Essie Green, Past Secretary

ADVISORY COMMITTEE

(1963-1964)

Florence Alexander, Director, Department of Nursing, American Medical Association, Chicago, Illinois

Charlotte Davidson, Director of Nursing Education, Port Huron Junior College, Port Huron, Michigan

Agnes Gelinas, Chairman, Department of Nursing, Skidmore College, New York, New York

Marjorie Gooch, Research Analyst, Public Health Service, Washington, D. C.

Thad Hungate, Professor of Higher Education, Teachers College-Columbia University, New York, New York

Martha Johnson, Director, Division of Nursing, Department of Professional Services, American Hospital Association, Chicago, Illinois

Edna S. Lepper, Associate Director, Nursing Service, Massachusetts General Hospital, Boston, Massachusetts

William P. Miller, President, Weber College, Ogden, Utah

Rita Mittlehauser, Accountant, Edmund F. Bowen and Company, New York, New York

Edith D. Payne, Director of Nursing, Presbyterian-St. Luke's Hospital, Chicago, Illinois

Mabel Reid, Statistician, Visiting Nurse Service of New York, New York, New York

John Dale Russell, former Director, Office of Institutional Research, New York University, New York, New York

Sister Charles Marie, Dean, School of Nursing, The Catholic University of America, Washington, D. C.

Sister Ruth Marion, Assistant Controller, St. Vincent's Hospital of the City of New York, New York, New York

Elton TeKolste, Executive Secretary, Indiana Hospital Association, Indianapolis, Indiana

Granville Thompson, Manager of Institutional Activities, Lybrand, Ross Bros. and Montgomery, Boston, Massachusetts

William K. Turner, Administrator, Newport Hospital, Newport, Rhode Island

Howard A. Withey, Certified Public Accountant, Peat, Marwick, Mitchell and Company, New York, New York

SAMPLE OF DIPLOMA PROGRAMS

In December, 1958, each state-approved diploma program in the United States was asked if it would be willing and able to participate in the study. The responses indicated that a truly random sampling of these programs was not possible. Of the 858 fully operating programs, 314, or 37 percent, indicated that they were willing and able to participate.

Of those willing and able to participate, a sample was selected that would possess certain independent variables as these variables existed in the population. The variables were enrollment size, type of control, and NLN geographic region. Table 1 shows, by subgroup of each variable, the number of programs in the total population, the number of programs originally selected for the study, and the number of programs actually studied. The percentages in each column are comparable.

TABLE 1. NUMBER OF PROGRAMS IN THE UNITED STATES AND NUMBER SELECTED FOR STUDY, BY VARIABLE

Variable	Number of Programs		
	In U.S.A.	Originally Selected	Actually Studied
Enrollment size[1]			
Small	264 (31%)	47 (31.3%)	23 (18%)
Medium	303 (35%)	53 (35.3%)	53 (42%)
Large	291 (34%)	50 (33.3%)	50 (40%)
Total	858 (100%)	150 (100%)	126 (100%)
Type of control[2]			
Public	112 (13%)	20 (13%)	22 (17.5%)
Private S	373 (43.5%)	66 (44%)	61 (48.5%)
Private D	373 (43.5%)	64 (43%)	43 (34%)
Total	858 (100%)	150 (100%)	126 (100%)
NLN region[3]			
I (North Atlantic)	322 (37.5%)	56 (37%)	47 (37%)
II (Midwest)	275 (32%)	48 (32%)	37 (29.5%)
III (South)	210 (24.5%)	36 (24%)	32 (25.5%)
IV (West)	51 (6%)	10 (7%)	10 (8%)
Total	858 (100%)	150 (100%)	126 (100%)

---

1. Small = less than 70 enrolled. Medium = 70-119 enrolled. Large = 120 or more enrolled.

2. Public = federal or nonfederal government control. Private D = religious denominational control. Private S = secular control.

3. Region I = Connecticut, Delaware, District of Columbia, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont. Region II = Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin. Region III = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Tennessee, Texas, Virginia, West Virginia. Region IV = Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

When the number of willing and able programs with a particular combination of variable categories was greater than the desired number, the desired number was chosen at random. All selected programs participated in the study excepting those unable to secure cooperation of all cooperating agencies connected with the program. When alternates existed, a participant that withdrew from the study was replaced by one of its alternates. If no alternate existed, a selection was made among all alternates on the basis of similarity of variable categories. The entire sample of programs was evaluated periodically for agreement with the over-all sampling design.

Of all the variable categories considered, the greatest difficulty was encountered in the study of programs with small-size enrollments. Several factors contributed to this difficulty. Many of these programs were located in small hospitals with limited accounting facilities. In several instances, the promised data were not submitted or were withdrawn after having been submitted. During the years in which the study was conducted, certain programs that had enrollments of less than 70 at the time of selection had enrollments of over 70 during the year of their cost analysis. In several instances, a replacement made for this variable differed from the original choice in another variable.

In terms of the independent variables under investigation, the sample was representative of the population of diploma programs. Because random sampling was not possible, it is unknown whether or not results are applicable to the population of diploma programs. Results are, at the least, applicable to the 314 programs that expressed willingness to participate in the study.

METHODS USED IN THE STUDY

BELIEFS EXPRESSED IN METHODS OF COSTING

Certain beliefs or points of view are inherent in any method of determining cost. If one were to analyze the cost of a product by means of two methods based upon two differing beliefs, the result could be two different costs for the same product. The costs of diploma programs as reported here reflect the beliefs that underlie the method used to determine these costs. One of these beliefs is that if a hospital provides an educational program, this program is in fact a function of the hospital. According to this belief, each functional unit of the hospital, including the educational program, should bear its fair share of the operating cost of the hospital.

Another point of view is that the cost of this educational program should be looked upon as the money that would be saved if the educational program were to be discontinued. Here, the cost of the program is the cost that would be avoided if there were no educational program. The point of view of avoidable cost is not reflected in the cost analysis method used to obtain data in this study.

The following brief description of the methods employed in the present study includes both the method for analyzing the cost of diploma programs and the method used to estimate the value of the students' clinical experiences to nursing service. Appendix B offers the reader who is unfamiliar with cost analysis methods a simplified illustration of certain steps in the cost analysis.

METHODS FOR ANALYZING THE COSTS OF A HOSPITAL-SUPPORTED DIPLOMA PROGRAM

Throughout the study, the methods of cost analysis used for all types of institutions were those described or recommended in the NLN manual entitled Cost Analysis for Collegiate Programs in Nursing, Part I.[1] The manual includes a method for analyzing the costs of a hospital that serves as a cooperating agency for a collegiate program in nursing. This cost analysis includes cost centers that are applicable to a hospital setting. It was used to analyze the operating costs of all hospitals included in the study.

In five instances, a public health agency served as a cooperating agency for a diploma program. Costs in these agencies were analyzed by means of the method developed by the National Organization for Public Health Nursing[2] (one of the three organizations that merged to form the National League for Nursing).

For each hospital offering any part of a diploma program, the cost analysis consisted of three steps: costing direct expenditures, collecting statistics used in apportioning expenditures, and apportioning these expenditures.

Costing Direct Expenditures

Each institution's total expenditures for the most recently completed fiscal year were classified and recorded under certain headings. Each heading pertained to a function, an activity, or a department of the hospital. These headings were called cost centers. So that comparable data could be collected, it was important that the cost centers reflect the same function, activity, or department in each institution. When the institution's accounts were not classified under the desired cost centers, the study consultant in accounting assisted the institution's fiscal department in reclassifying the accounts. The cost centers used in the cost analysis of a hospital were:

A. Staff Benefits (provisions for the welfare of employees such as group insurance, Social Security taxes, and Workmen's Compensation Insurance).

B. Health Service (limited to a formally organized health program that included health service for employees).

---

[1] Leslie W. Knott and others. Cost Analysis for Collegiate Programs in Nursing, Part I, Analysis of Expenditures. New York, National League for Nursing, 1956. Out of print.

[2] National Organization for Public Health Nursing. Cost Analysis for Public Health Nursing Services. New York, National League for Nursing, 1950.

C. Operation and Maintenance of Physical Plant (including maintenance of and utilities for plant operation).

D. Administration and General Expense (limited to general administrative functions, excluding administrative functions exclusively for patients, such as the functions of the admitting office).

E. Laundry.

F. Housekeeping.

G. Dietary (including dietary service for patients and all others).

H. Employee and Student Nurse Residence (excluding residences that housed employees only).

I. Library (including hospital libraries used by nursing students and others, excluding the hospital's medical records department).

J. Maintenance of the Religious (when applicable).

K. Nursing Education: Noneducational Functions (including such functions as provisions for nursing students' housing, meals, laundry, and recreation and separate health services for nursing students).

L. Nursing Education: Educational Functions (including such functions as provisions for the nursing students' instructional program and counseling, separate libraries for nursing students, and the keeping of educational records).

M. All Other Hospital Functions (including all functions not included in the previous cost centers, such as the care of patients and educational programs other than the basic diploma program).

N. Use Value of Buildings (not allocated as a cost).

The items of direct expense, such as salaries and supplies, were entered under each of these cost centers and summed to derive the total direct expenditures in each cost center. The cost centers from A, Staff Benefits, through I, Library, were general service, or overhead, cost centers. The cost centers from J, Maintenance of the Religious, through M, All Other Hospital Functions, were primary cost centers. The expenses accumulated in the overhead cost centers were distributed among the primary cost centers. Statistics were collected to show the extent to which each cost center was of service to other cost centers. For example, statistics were collected to show the number of meals eaten by persons in each cost center. The statistics served as bases for allocating the expenses of the general service cost centers to the primary cost centers in accordance with the amount of general services provided.

Collecting Statistics Used in Apportioning Expenditures

The statistics collected to apportion overhead expenditures gave as accurate an account of the use of general services as was practicable. For instance, the basis for allocating the direct expenditures of the cost center Operation and Maintenance of Physical Plant was the proportion of total square footage occurring in each cost center. A more accurate picture of the use of this service could have been obtained if each participating institution had been required to install meters to measure the amount of electricity, water, and steam supplied to each cost center, but such a requirement would have been impractical.

The following list of bases for the allocation of each general service cost center indicates the statistics used for these allocations.[1]

Cost Center	Basis for Allocation
A. Staff Benefits	Proportion of total salaries and wages occurring in each cost center.
B. Health Service	Proportion of total health service visits made by persons in each cost center or proportion of total number of eligible persons occurring in each cost center.
C. Operation and Maintenance of Physical Plant	Proportion of total square footage occurring in each cost center.
D. Administration and General Expense	Proportion of total direct expenses occurring in each cost center.
E. Laundry	Proportion of total man-hours involved in washing and finishing laundry devoted to laundry sent by each cost center and/or proportion of total poundage sent by each cost center.

---

[1] For a more detailed picture of the statistical data that were collected, see Appendix C.

Cost Center	Basis for Allocation
F. Housekeeping	Proportion of total square footage serviced by housekeeping occurring in each cost center.
G. Dietary	Proportion of total meals served to persons in each cost center.
H. Employee and Student Nurse Residence	Proportion of total rooms reserved for persons in each cost center or proportion of total weeks of occupancy occurring in each cost center.
I. Library	Proportion of total usage of library by persons in each cost center.

Apportioning Expenses of General Service Cost Centers

Using the bases described above and the close-out, or step-down, method of cost analysis,[1] each general service cost center was closed out--that is, completely apportioned. Each cost center was closed out as a separate step. The general service cost centers were closed out in alphabetical sequence according to their code letters. That is, cost center A, Staff Benefits, was closed out first and cost center I, Library, was closed out last. Apportionments from any cost center were made to only those cost centers that followed it in alphabetical sequence. For example, in closing out cost center C, C's expenses were allocated to all subsequent cost centers but not to A or B. In each instance, the amount of money that was closed out was the sum of the cost center's direct expenditures plus apportionments from any other cost center. This process is illustrated on the summary sheet of the cost analysis at the end of this section.

The result of this apportionment was the isolation of the yearly cost of nursing education, including its appropriate share of the overhead cost, from the yearly cost of all the other functions, activities, and departments of the hospital.

Determining the Net Cost of Nursing Education

The term net cost as used in this study refers to the result of subtracting the institution's real income designated for the nursing program from the institution's gross cost of operating the program. This income did not include the estimated value of the student's contribution to nursing service. It did include tuition and all fees that pertained to instruction and were credited to Educational Functions. When students were charged for room and board, health services, or health insurance, this income was credited to Noneducational Functions. When applicable, income included governmental appropriations, private gifts, and endowment income restricted to nursing education. When gifts or appropriations were not specifically designated as income to be credited to either Educational Functions or Noneducational Functions, the income was credited to Educational Functions and Noneducational Functions proportionately to the respective costs of these functions.

Method for Estimating the Value of Student Contribution to Nursing Service

The method used to estimate the value of the student's contribution to the hospital's nursing service was the Saunders-Murchison Professional Ability-Usability Method, which is described in Part II of Cost Analysis for Collegiate Programs in Nursing.[2]

Briefly, the method involves three steps:

1. Determining the hourly rate of pay that the student would be entitled to receive if she were a full-time employee.
2. Reducing this value by the extent to which the student is not as usable as a full-time employee.
3. Determining the value of the student's contribution to nursing service by multiplying the reduced value by the hours of the clinical experience.

Two types of data were used to determine what the student would be worth as a full-time employee: the faculty's estimation of the portion of professional abilities acquired in each six months of the program and the hourly rates of pay to two categories of employees.

---

[1] For a simplified explanation of this method, see Appendix B.

[2] Leslie W. Knott and others. Cost Analysis for Collegiate Programs in Nursing, Part II, Current Income and Other Sources. New York, National League for Nursing, 1957, pp. 21 ff.

The term professional abilities was defined as the knowledge, skills, and attitudes necessary for graduation from the program. The faculty determined the percent of professional abilities that the average student possessed at the midpoint of each six-month portion of the program.

Payment for the professional ability was the amount that the hospital paid the beginning staff nurse in excess of what the hospital paid the beginning nonskilled nursing service employee. Considering the student as a full-time employee, her hourly value would be that of the nonskilled employee plus the percent of payment for professional ability commensurate with her level of professional ability.

By way of example, one faculty determined that the student had acquired 50 percent of the professional abilities at a given point in the program. In this hospital, the beginning graduate nurse was paid $2.00 per hour. She received $1.00 more per hour than did the beginning nonskilled nursing service employee, who was paid $1.00 per hour. If a student at this point of the program were to have left school to become a full-time employee of the hospital, her hourly value would have been $1.50--that is, the $1.00 paid for nonskilled service plus $0.50 for her professional abilities.

The head nurses and supervisors responsible for administering nursing service determined usability of the student. Usability was defined as the extent to which, compared with nursing service personnel, the students' activities during clinical experience were directed toward meeting the needs of nursing service. Usability was determined for each six-month interval of the program for each clinical area. In the previous example, at this point in the program the student's value as a full-time employee was $1.50 per hour. On the medical-surgical unit, her usability was judged to be 50 percent of that of a nursing service employee. The corrected hourly value was $0.75 per hour. If, during this six-month period, the student had 100 hours of medical-surgical clinical experience, her value to nursing service was $75.00.

The dollar values resulting from the use of this method are not held to be comparable with the dollar values resulting from the cost analysis. Unlike the cost analysis, this method combines judgments of individuals (faculty, supervisors, and head nurses) with expenditures recorded in the hospital's accounts.

METHODS USED IN STATISTICAL TREATMENT OF THE DATA

Determining the Unit of Cost

In each institution studied, the cost of nursing education for students in the diploma program was converted into cost per student-week. This unit of cost was used for both the parent institution and the cooperating agency. (The term parent institution refers to the hospital that provided financial support for the major portion of the program. Cooperating agency refers to a hospital that provided one of the clinical courses in the program, such as a course in the nursing of children.)

The programs studied varied as to the amount of the program that was conducted in the parent institutions. Some of the hospitals had facilities for the entire program. In some instances, as much as one-fifth of the instructional weeks of the program occurred in cooperating agencies. The programs studied also varied in length, exclusive of vacation periods. Using a unit such as cost per student enrolled could have resulted in misleading comparisons among the parent institutions.

The student-weeks in the parent institution were determined by (1) computing the total student-weeks for all students enrolled during the fiscal year of the study and (2) subtracting from this total the number of student-weeks of vacation plus the number of student-weeks spent in cooperating agencies. In most of the programs studied, a student spent an average of 43 weeks in the parent institution during the year of the study.

In several of the programs in the study, the number of student-weeks of educational functions accumulated in the parent institution differed from the number of student-weeks of noneducational functions accumulated there. Usually, the parent institution was in close proximity to the cooperating agency and continued to provide its students with room and board while they were taking the course offered by the cooperating agency.

The cost per student-week for educational functions in a cooperating agency was computed by dividing the educational-functions cost of the particular course by the total number of student-weeks of educational functions accumulated by all students taking the course during the year of study. Some of the cooperating agencies studied were conducting their own diploma programs. In several of these agencies, the agency's students were taking the nursing course under study along with students from other diploma programs. When this occurred, the cost of educational functions was prorated to determine the cost of the particular course. The basis for proration was the percent of instructional salaries applicable to the nursing course being studied.

In all institutions and agencies, noneducational-functions costs per student-week are the total noneducational-functions costs for the year divided by the total number of student-weeks of noneducational functions accumulated during the year.

In a few instances, the hospital being studied as a parent institution was itself a cooperating agency in that it offered a course to students of other diploma programs. When this occurred, the parent institution's educational-functions costs were prorated as they were when the cooperating agency had its own diploma program.

The cost of the total program was the sum of the cost of all student-weeks accumulated in all institutions or agencies offering parts of the program. The cost of the total program was divided by all student-weeks accumulated by all students in the program (exclusive of weeks of vacation) during the year. The result was the cost per student-week for the total program.

Statistical Analysis

Measures of central tendencies of cost are usually reported in terms such as median cost (the cost midway between the highest and lowest cost) or the interquartile range of cost (the middle 50 percent of the range of all costs). These measures are customarily preferred to a mean cost (the numerical average derived by dividing the sum of all costs by the total number of cases). The mean cost can give a misleading picture of central tendency when a few of the costs are unusually small or unusually great. The median cost is not distorted by extreme cases. Median costs rather than mean costs are cited in this report.

The statistical analyses used in this study, like the median, are limited to tests that consider the rank, or the relative standing, of each case. For the purpose of comparison, the mean rank of a group of programs will be reported. This is not a numerical mean of costs. It is the average rank, or standing, of all cases in the group.

Statistical tests were used to determine whether or not certain diploma programs were significantly more costly than others. The tests used were nonparametric tests--that is, tests that can be used to test a phenomenon when the parameters (limits) of the phenomenon are unknown. The limits of the costs of diploma programs in nursing throughout the country are unknown. It is not known whether or not these costs are distributed in the pattern of a normal curve of distribution. If such knowledge had existed, the alternative, or parametric, tests could have been used. Compared with nonparametric tests, parametric tests are more powerful. That is, they are more sensitive in detecting significant differences.

The statistical tests were used to determine whether or not such characteristics as size of enrollment were related to relatively small or relatively great costs of diploma programs. If it happened that a small-size enrollment was related to relatively greater costs per student-week, this finding did not indicate that the small-size enrollment caused the cost to increase. Another characteristic of programs with small-size enrollments, not considered in this study, could have been the cause. It did indicate, however, that relatively higher costs tend to occur in programs with small-size enrollments.

Two nonparametric tests were applied to the data. When the characteristic, or variable, consisted of two subgroups (such as public control and private control), the test used was the Mann-Whitney U test. When the variable had more than two subgroups (for example, geographic location, which was divided into four subgroups--the four NLN regions), the Kruskal-Wallis one-way analysis of variance was used. The results of this test could show that there were differences in cost among the four regions, but they could not identify the region or regions that accounted for the differences.

For further description of the methods used in the study, see Appendix A.

EXAMPLE OF COST ANALYSIS

Table 2 is the final schedule of the cost analysis of one participating parent institution. This schedule summarizes the results of the first and third steps of the cost analysis procedure.

The horizontal line under item 2, Total Expenses, divides the data arrived at in the first step from that arrived at in the third step. The upper portion of the table is a record of the direct expenses occurring in each cost center. The lower portion is a record of the apportionments by which each cost center was closed out. Each amount of money that was closed out is indicated by a double underline. The series of downward steps formed by the underlined sums accounts for the name step-down that is sometimes used to identify this method of analysis.

The horizontal series of figures to the right of closed-out amounts are the allocations made from those amounts to the respective centers listed in the column headings.

In columns K and L, the two nursing education cost centers, are listed the direct and indirect expenses that account for the cost of the institution's diploma program in nursing.

Table 2 summarizes the findings of 28 schedules that were used to report data for the cost analysis. The 28 schedules enumerate items of direct expense or record the process of or basis for allocations (see Appendix C).

TABLE 2. SUMMARY OF COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

DATA FOR FISCAL YEAR ENDED December 31, 1961

ITEM	STAFF BENEFITS (A)	HEALTH SERVICES (B)	OPERATION OF PHYSICAL PLANT (C)	ADMIN. & GENERAL EXPENSE (D)	LAUNDRY (E)	HOUSE-KEEPING (F)	DIETARY (G)	EMPLOYEE & STUDENT NURSE RESIDENCE (H)	LIBRARY (I)	MAINTENANCE OF THE RELIGIOUS (J)	NURSING EDUCATION: NON-EDUCATIONAL FUNCTIONS (K)	NURSING EDUCATION: EDUCATIONAL FUNCTIONS (L)	ALL OTHER HOSPITAL FUNCTIONS (M)	USE VALUE OF BUILDINGS (N)	TOTAL (O)
1. DIRECT EXPENSES															
a. Actual salaries and wages	$	$ 2,130	$ 88,102	$ 196,915	$ 92,597	$ 183,232	$ 251,058	$	$	$	$ 10,052	$ 76,138	$1,643,231	$	$2,543,455
b. Imputed salaries and wages		1,700													1,700
c. Actual and imputed salaries and wages (total)		3,830	88,102	196,915	92,597	183,232	251,058				10,052	76,138	1,643,231		2,545,155
d. Supplies and expense	133,596	5,733	145,000	197,269	10,307	24,702	201,529	688			1,515	27,719	614,697		1,362,755
e. Depreciation of (or capital expenditures for) equipment			81,648												81,648
f. Use value of buildings														163,809	163,809
g. Transfers within hospital												219	(219)		
h. Total															
2. TOTAL EXPENSES	133,596	9,563	314,750	394,184	102,904	207,934	452,587	688			11,567	104,076	2,257,709	163,809	4,153,367
3. ALLOCATION WITHIN HOSPITAL															
a. Staff benefits	133,596	107	4,622	10,340	4,863	9,619	13,199				534	3,995	86,317		
b. Health services		9,670	82	286	169	298	696				6,145	82	1,912		
c. Operation of physical plant			319,454	9,871	11,660	958	8,753	46,321			3,770	13,034	225,087		
d. Administration and general expense				414,681	13,602	27,493	59,838	83			1,534	13,726	298,405		
e. Laundry					133,198			1,496			4,276		127,426		
f. Housekeeping						246,302	7,261	38,423			3,128	10,813	186,697		
g. Dietary							542,314				105,155		437,159		
h. Employee and student nurse residence								87,011			87,011				
i. Library									—						
j. Maintenance of The Religious										—					
NURSING EDUCATION															
k. Non-educational functions											223,120				
l. Educational functions												145,726			
m. All other hospital functions													3,620,712		
n. Use value of buildings														163,809	
4. UNALLOCATED CHARGES											223,120	145,726	3,620,712	163,809	4,153,367

GROSS COST OF DIPLOMA PROGRAMS TO PARENT INSTITUTIONS

The data from the cost analyses in 126 parent institutions were compiled to determine the distribution of gross costs of diploma programs to the institutions offering the programs. This distribution is shown in Table 3 at the end of this chapter, in which data from the 126 institutions are listed in order of increasing gross cost per student-week for all functions of the diploma program. In the cost analyses and in all subsequent treatment of the data, the costs were considered in terms of the cost of all functions of the program and in terms of the two component functions of the program as defined in the cost analysis method--educational functions and noneducational functions. Table 3 indicates for each parent institution the portions of the total cost that pertained to educational functions and noneducational functions, respectively.

The data from the 126 cost analyses were compiled in other ways to determine whether or not a certain independent variable, such as enrollment size or geographic region, was related to relatively greater or relatively lesser gross costs to the parent institution for the diploma program.

Figures 1 and 2 are graphic illustrations of central tendencies of costs of the various functions when the 126 cases were divided into the subgroups of each variable. As is customary with cost data, the median is used to indicate the central tendency.

The upper part of Figure 1 plots the medians for the three subgroups of the variable enrollment size--small (under 70 students), medium (from 70 to 120 students), and large (120 or more students). The three black bars at the top represent the medians of the three subgroups for the gross cost of both functions of the program--the sum of the cost of educational functions plus the cost of noneducational functions.

The median for the cost of both functions is approximately $16 (or 30 percent) more per student-week in programs of small enrollment size than it is in programs of medium or large enrollment size. The median cost of educational functions in programs of small enrollment size is 57 percent higher than the median in programs of large enrollment size.

In Figure 1 and Figure 2, there are differences among the medians of subgroups under each of the four variables. In evaluating these differences, the question to be answered was, Are the differences greater than those one would expect to occur among subgroups formed by merely shuffling the cost figures at random? The following figures do not include a factor that affects the probability of chance variation--the number of cases in a subgroup. If one were making random subgroups from a list of 100 costs, one would be more apt to randomly bring together all relatively high costs in a subgroup of 5 cases than to do so in a subgroup of 50 cases. In other words, the greater the number of items in a group, the smaller the chances of their being all relatively high costs.

RELATIONSHIP OF PROGRAM COSTS TO THE FISCAL YEAR OF THE ANALYSIS

The cost analyses of parent institutions and cooperating agencies included in this study do not pertain to the same fiscal year. Some analyses pertain to fiscal year[1] 1959, some to 1960, some to 1961, and a few to 1962. There were indicators, such as the cost-of-living indexes, that the fiscal year of the analysis might be a variable with a significant effect upon the cost of nursing education. If this were so, one finding of the study might be that the costs varied significantly with the fiscal year of the cost analysis. If it could be proved that they had varied significantly, this finding would complicate the interpretation of other findings of significant relationships between variables, such as the relationship between enrollment size and cost.

Therefore, the data were examined first for evidence of significant relationships between gross costs and the fiscal year of the analysis.

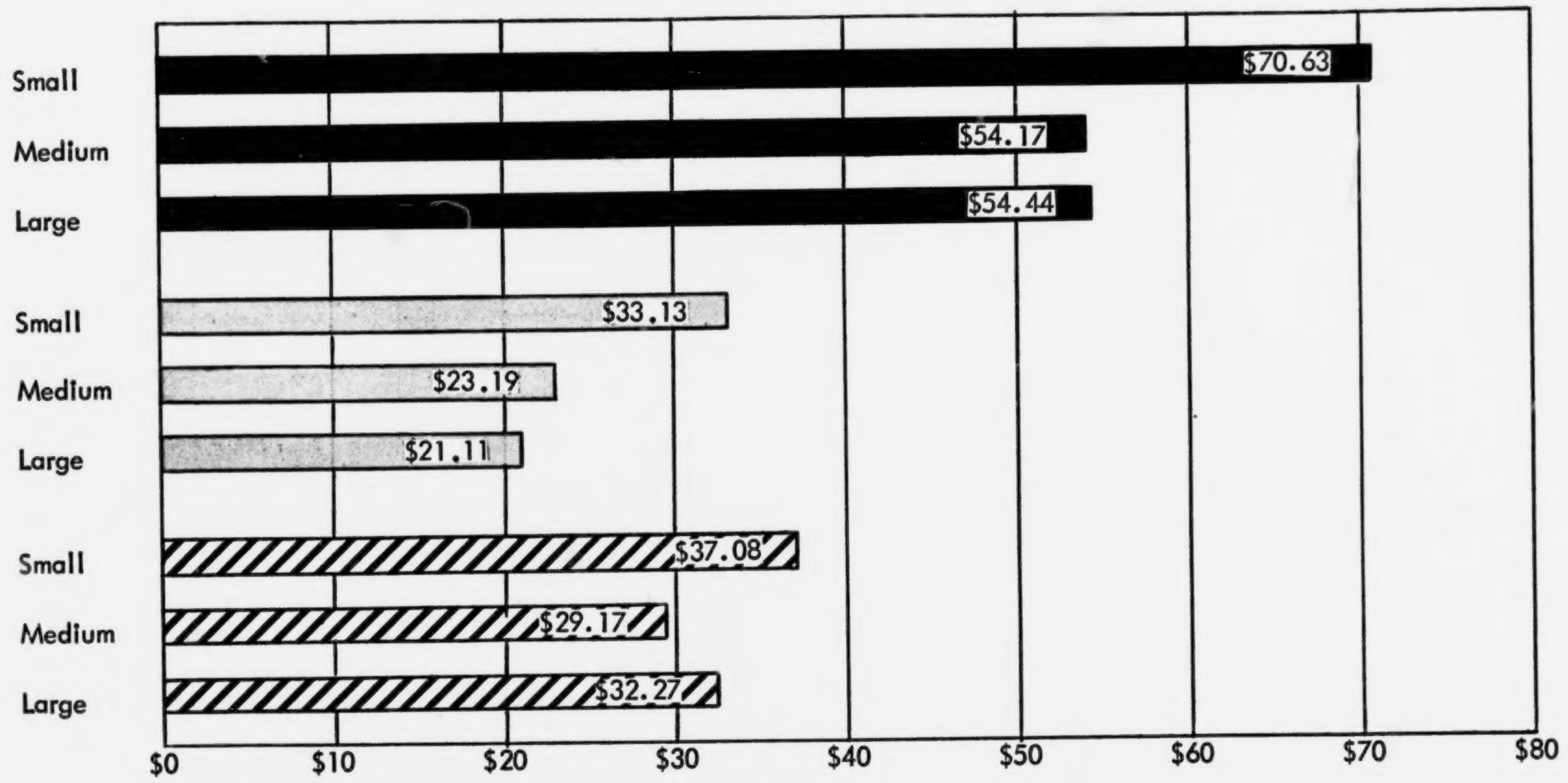
The 126 parent institutions were ranked as to the gross cost of educational functions per student-week. The institution with the lowest cost per student-week was ranked 1; that with the highest cost was ranked 126. The average rank was 63.50. The 126 institutions were divided into three subgroups--(1) those with cost analyses for fiscal year 1959, (2) those with analyses for 1960, and (3) those with analyses for either 1961 or 1962 (the small number of 1962 cases justified combining these two years). The average rank for each subgroup was computed. For purposes of comparison, the average rank of the total group (63.50) was subtracted from the average rank of each subgroup. When the result was a positive number, this indicated that the average rank (or cost) of this subgroup was higher than the average rank (or cost) of all cases. When the result was a negative number, this indi-

---

1. Throughout the study, the fiscal year is the year in which the last day of the fiscal period occurred.

FIGURE 1. MEDIAN GROSS COST OF EDUCATIONAL AND NONEDUCATIONAL FUNCTIONS PER STUDENT-WEEK TO PARENT INSTITUTIONS, BY ENROLLMENT SIZE AND REGIONAL SUBGROUPS
(126 Programs)

Enrollment Size Subgroups



NLN Regional Subgroups

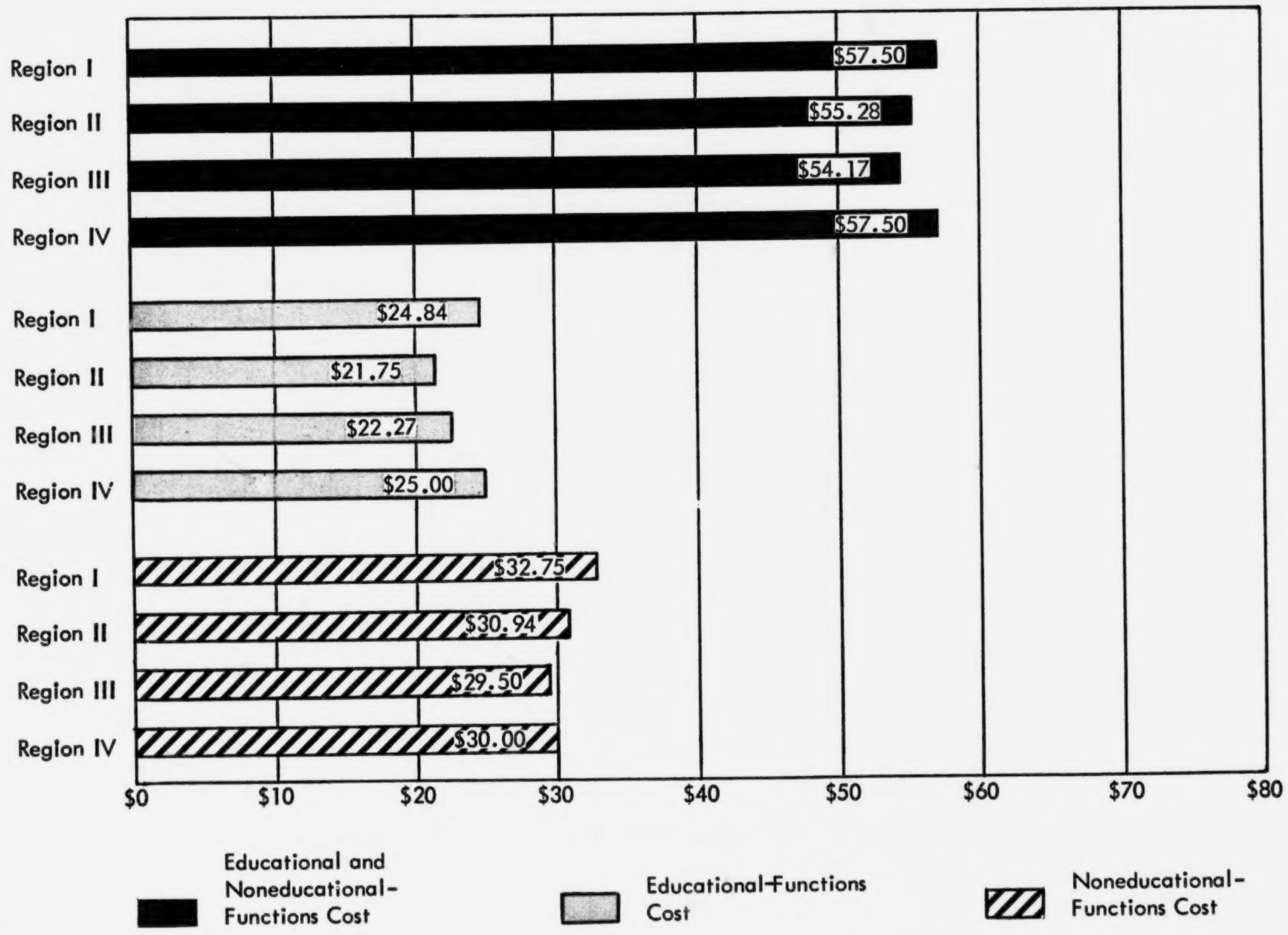
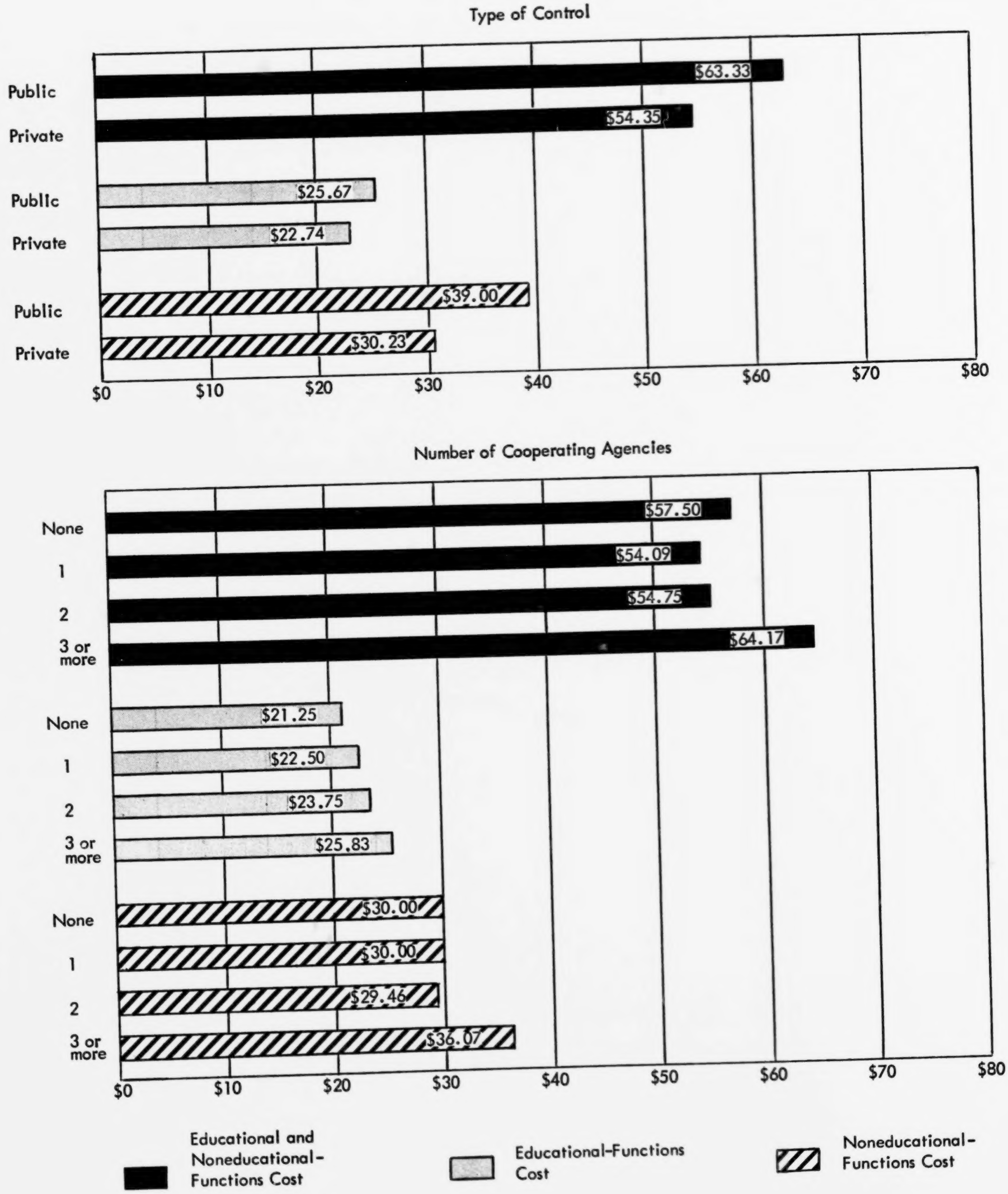


FIGURE 2. MEDIAN GROSS COST OF EDUCATIONAL AND NONEDUCATIONAL FUNCTIONS PER STUDENT-WEEK TO PARENT INSTITUTIONS, BY TYPE OF CONTROL AND NUMBER OF COOPERATING AGENCIES
(126 Programs)


Type of Control

Number of Cooperating Agencies

cated that on the average, this subgroup had a somewhat lower cost per student-week than did all of the cases studied. The results of these operations were as follows:

Subgroup by Fiscal Year	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational Functions	
		Average Rank	Average Rank Minus 63.50*
1959	32	60.28	-3.22
1960	43	61.56	-1.94
1961 or 1962	51	67.16	3.66

*The average rank of all (126) cases.

The above table indicates that compared with the average rank for gross cost of educational functions per student-week for all parent institutions, those with studies completed in 1959 or 1960 tend to be somewhat less costly than those studied in 1961 or 1962. The Kruskal-Wallis one-way analysis of variance was used to determine whether or not the differences between the subgroups were greater than one would expect on the basis of chance alone. The results of this test (chi-square = 0.88 at 2 degrees of freedom) indicated that it was highly probable (probability is greater than .50) that selecting three subgroups of these sizes on a purely random basis could have resulted in variations as great as those observed.

When the 126 parent institutions were ranked similarly as to the gross cost of noneducational functions per student-week, the results comparable to the above were as follows:

Subgroup by Fiscal Year	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Noneducational Functions	
		Average Rank	Average Rank Minus 63.50*
1959	32	70.09	6.59
1960	43	60.47	-3.03
1961 or 1962	51	61.92	-1.58

*The average rank of all (126) cases.

The results of the Kruskal-Wallis one-way analysis of variance indicated that these variations were not statistically significant (chi-square = 1.40 at 2 degrees of freedom; $p > .30$).

When the 126 parent institutions were ranked similarly as to the gross cost of educational functions plus that of noneducational functions per student-week, the results were as follows:

Subgroup by Fiscal Year	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational and Noneducational Functions	
		Average Rank	Average Rank Minus 63.50*
1959	32	65.84	2.34
1960	43	61.37	-2.13
1961 or 1962	51	63.82	0.32

*The average rank of all (126) cases.

The statistical test again indicated that the above variations were not significant (chi-square = 0.28 at 2 degrees of freedom; $p > .80$).

Considering the cost of educational and noneducational functions either separately or combined, it did not appear that these costs were influenced appreciably by the year in which the study was completed.

A similar search was made for relationships between the fiscal year of the study and gross costs per student-week in cooperating agencies. Cost analyses were completed for 119 cooperating agencies. Two of the 119 cooperating agencies did not provide noneducational functions for the diploma program students; therefore, the number of cases of noneducational and noneducational plus educational costs is limited to 117. With this exception and the resulting difference in average rank of all cases, the tables for the cooperating agencies are similar to those for the parent institutions.

The following table shows the average rank of the subgroups of cooperating agencies as to educational-functions gross costs per student-week.

Subgroup by Fiscal Year	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational Functions	
		Average Rank	Average Rank Minus 60.00*
1959	46	56.00	-4.00
1960	40	60.78	0.78
1961 or 1962	33	64.38	4.38

*Average rank for all (119) cases.

The results of the Kruskal-Wallis one-way analysis of variance indicated that the above variations were not statistically significant (chi-square = 1.14 at 2 degrees of freedom; $p > .50$).

The following table gives similar data for gross costs of noneducational functions per student-week.

Subgroup by Fiscal Year	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Noneducational Functions	
		Average Rank	Average Rank Minus 59.00*
1959	46	57.28	-1.72
1960	39	59.26	0.26
1961 or 1962	32	61.16	2.16

*Average rank for all (117) cases.

The statistical test indicated that the above variations were not significant (chi-square = 0.25 at 2 degrees of freedom; $p > .80$).

The following table gives similar data for gross cost of educational functions plus that of noneducational functions per student-week.

Subgroup by Fiscal Year	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational and Noneducational Functions	
		Average Rank	Average Rank Minus 59.00*
1959	46	57.57	-1.43
1960	39	58.46	-0.54
1961 or 1962	32	61.72	2.72

*Average rank for all (117) cases.

The statistical test indicated that the above variations were not significant (chi-square = 0.30 at 2 degrees of freedom; $p > .80$).

In all of the foregoing analyses of the data, there was no evidence of a significant relationship between the fiscal year of the study and the cost of nursing education to the parent institution or to the cooperating agency. That is, data collected for the study indicated that the increase in the cost of living that occurred during the study period did not necessarily result in an increase in the cost of operating a diploma program.

An analysis of the gross cost of a diploma program to one parent institution was done for the fiscal year 1959 and was repeated for the fiscal year 1962. The program had undergone two changes in this time interval: it had increased somewhat in enrollment size and the site of the course in psychiatric nursing was changed from a cooperating agency to the parent institution. Both of these were changes in the direction of increasing the number of student-weeks from 3,624 in 1959 to 4,480 in 1962--an increase of 24 percent.

A number of the items of cost within the parent institution showed an increase during the time interval. Certain of these were as follows:

Cost Item	1959 Cost	1962 Cost	Change
Staff benefits (per dollar of salary)	$0.037	$0.043	16% increase
Housekeeping (per square foot)	0.48	0.64	33% increase
Plant operation (per square foot)	0.69	1.03	49% increase
Laundry (per average piece)	0.04	0.07	75% increase

A rough approximation of the cost to the hospital for patient care (computed by dividing the total cost allocated to the cost center All Other Hospital Functions by the number of patient days) showed relatively less increase (6 percent) in this time interval.

As shown below, the total cost of educational and noneducational functions of the nursing program decreased slightly between 1959 and 1962. Considered separately, the cost of these two functions varied in opposite directions.

Cost Item	1959 Cost	1962 Cost	Change
Educational and noneducational functions per student-week	$58.80	$56.55	4% decrease
Educational functions per student-week	33.50	27.28	19% decrease
Noneducational functions per student-week	25.30	29.27	16% increase

GROSS COST OF EDUCATIONAL FUNCTIONS

The 126 parent institutions were ranked as to gross cost per student-week for educational functions. The ranks were sorted into subgroups representing the various geographic regions, the various enrollment sizes, and the various types of control. The results of these sortings were tested to determine whether or not educational-functions costs were related to the above-mentioned variables.

The method of testing for significant differences and the tables of data pertaining to the tests are generally comparable with the methods and tables pertaining to the fiscal-year subgroups.

Relationship of Geographic Region to Cost of Educational Functions

Figure 3 represents the distribution of educational costs in each of the four NLN regions. In numbered sequence these are: Region I, the North Atlantic; Region II, the Midwest; Region III, the South; and Region IV, the West. The states included in each NLN region are listed in a footnote to Table 1.

The parent institutions were ranked by gross cost of educational functions per student-week. When the ranks were sorted by regional subgroups, there were differences among the ranks of each regional subgroup. Region IV, for instance, was 9.60 ranks above the average rank for all cases, and Region II was 9.04 ranks below the over-all average. However, when all regional subgroups were analyzed statistically, the differences among them were not significant at the .05 level of probability. The result of the Kruskal-Wallis one-way analysis of variance applied to the ranks of the regional subgroups was a chi-square of 6.73 at 3 degrees of freedom. One could expect this degree of difference to occur on the basis of chance alone about once in every 10 random sortings of 126 ranks.

Data from this analysis are given in the following table.

Subgroup by NLN Region	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational Functions	
		Average Rank	Average Rank Minus 63.50*
Region I	47	72.62	9.12
Region II	37	54.46	-9.04
Region III	32	57.56	-5.94
Region IV	10	73.10	9.60

*The average rank of all (126) cases.

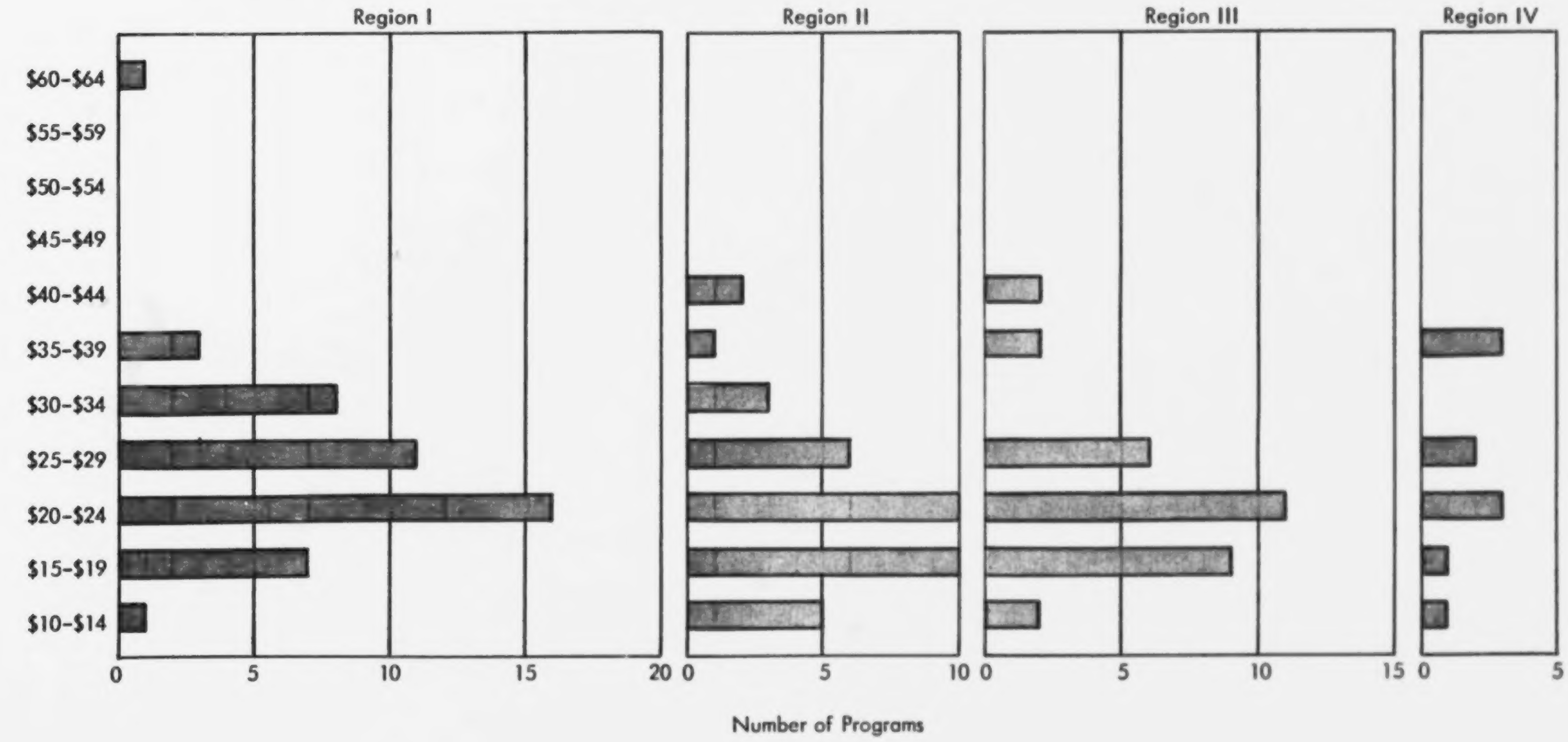
The analysis of variance among the fiscal-year subgroups resulted in a probability greater than .70. One could state with confidence that it was doubtful that the fiscal year of the analysis was related to the cost of educational functions. One could feel much less confident in discounting any relationship between the cost of educational functions and the geographic region. The search for evidence of the latter relationship was continued. Four tests (Mann-Whitney U) were done in which each subgroup was compared with all other cases considered as one subgroup. In the first test, for instance, the ranks of the 47 cases in the subgroup Region I were compared with the ranks of the remaining 79 cases.

The results of the four Mann-Whitney U tests are shown in the following table. (Probabilities are based upon standard scores (z)--that is, the number of standard deviations from the mean.)

Subgroup by NLN Region	Average Rank of Subgroup	Average of Ranks of Cases in All Other Subgroups	Standard Score (z)	Probability
Region I	72.62	58.08	2.16	<.04
Region II	54.46	67.26	1.74	>.08
Region III	57.56	65.52	1.07	>.28
Region IV	73.10	62.79	0.87	>.38

According to the resulting probabilities (last column of the above table), the only finding that was significant at the .05 level of probability was that in Region I, the parent institutions tended to have higher gross costs for educational functions than did

FIGURE 3. GROSS COST OF EDUCATIONAL FUNCTIONS PER STUDENT-WEEK TO PARENT INSTITUTIONS, BY REGIONAL SUBGROUPS
(126 Programs)

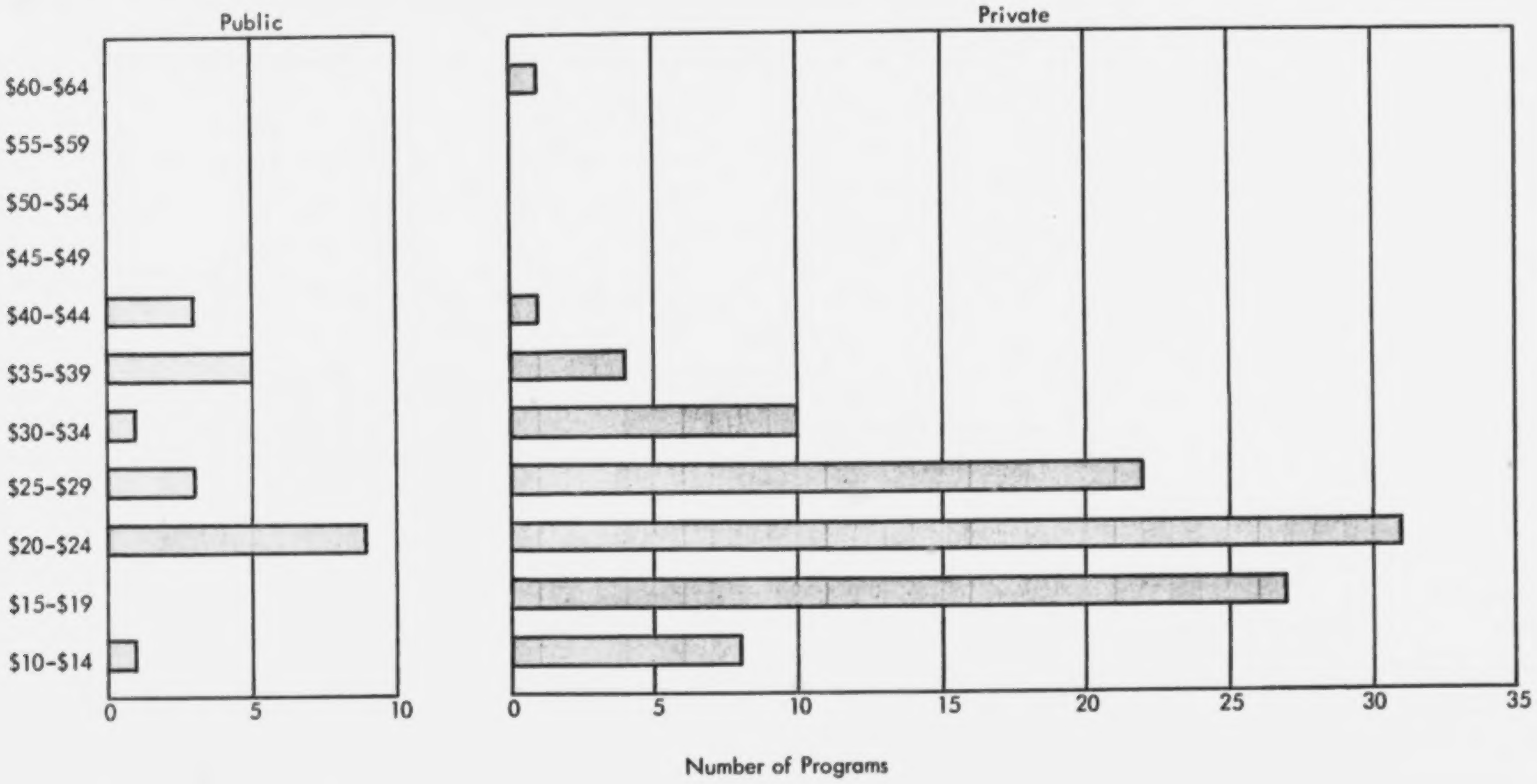


parent institutions in all other regions. Region I was 9.12 ranks above the mean rank for all cases. Region IV was 9.60 ranks above. Region I differed significantly from all other subgroups, whereas Region IV did not. This illustrates the importance of number of cases (47 in Region I and 10 in Region IV) in determining statistical significance.

Relationship of Type of Control to Cost of Educational Functions

Figure 4 represents the distribution of educational-functions costs in two main categories of type of control of the parent institution.

FIGURE 4. GROSS COST OF EDUCATIONAL FUNCTIONS PER STUDENT-WEEK TO PARENT INSTITUTIONS, BY TYPE OF CONTROL
(126 Programs)



In some of the subsequent analyses, additional type-of-control subgroups were used. The subgroup public was subdivided into institutions under the control of a city government and institutions under the control of other governments (county, state, and federal). The subgroup private was divided into voluntary institutions under secular control and voluntary institutions under religious control.

The variable type of control seemed to be more related to the cost of educational functions provided by parent institutions than did the variable geographic region. Data pertaining to these four subgroups are shown in the following table.

Subgroup by Type of Control	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational Functions	
		Average Rank	Average Rank Minus 63.50*
Federal, state, and county government	10	80.50	17.00
City government	12	89.75	26.25
Private secular	61	60.52	-2.98
Private religious	43	56.44	-7.06

*The average rank of all (126) cases.

The above table indicates that when ranked as to gross cost of educational functions, parent institutions under the control of of a city government had an average rank that was 26.25 ranks higher than the average rank for all cases, and parent institutions controlled by a religious denomination had an average rank that was 7.06 ranks lower than the over-all average.

The result of the Kruskal-Wallis one-way analysis of variance applied to the ranks of the four subgroups was a chi-square of 10.38 at 3 degrees of freedom, which indicates a significant relationship ($p < .02$).

Mann-Whitney U tests were used to investigate differences between each subgroup and all other cases considered as one subgroup. Data from these four analyses are presented in the following table.

Subgroup by Type of Control	Average Rank of Subgroup	Average of Ranks of Cases in All Other Subgroups	Standard Score (z)	Probability
Federal, state, and county government	80.50	62.03	1.53	>.12
City government	89.75	60.74	2.62	<.009
Private secular	60.52	66.29	0.89	>.37
Private religious	56.44	67.16	1.56	>.11

The last column of the above table indicates that only in the case of programs controlled by city governments did educational-functions costs differ significantly from those of all others. The previously mentioned analysis of variance applied to the same data, however, showed that the variance among all groups was a significant one. These are not contradictory results. The Kruskal-Wallis one-way analysis of variance was a test of all differences among the four subgroups. The Mann-Whitney U test was a test of the difference between one subgroup and a second subgroup consisting of all other cases.

An additional Mann-Whitney U test was applied to the 126 ranks divided into two subgroups by type of control: those of institutions under any type of public control and those of institutions under any type of private control. The data pertaining to the two subgroups are shown in the following table.

Subgroup by Type of Control	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational Functions	
		Average Rank	Average Rank Minus 63.50*
Public	22	85.55	22.05
Private	104	58.84	-4.66

*The average rank of all (126) cases.

The standard score (z) was 3.13, and the probability was less than .002. The difference in ranks between parent institutions under public control and those under private control was a significant one.

Generally, it can be said that the costs of educational functions to the parent institutions in this study were related to the type of control of the institution. The gross cost was greatest in institutions under public control and least in institutions under private control. Parent institutions under the control of a city government had significantly higher costs for educational functions than did those under other types of control.

Relationship of Size of Enrollment to Cost of Educational Functions

Figure 5 compares the distribution of educational-functions costs in the three enrollment-size subgroups used in the study.

As the distributions in the three subgroups indicate, there was a negative relationship between enrollment size and cost per student-week. When each school was ranked for the number of student-weeks accumulated during the year and for the cost of educational functions per student-week, the relationship between the two ranks was an r_s of minus .495 (Spearman rank correlation coefficient).

The most marked difference in average rank of educational-functions gross costs was observed when the ranks of the 126 institutions were divided into three subgroups by size of enrollment--small (less than 70), medium (from 70 to 120), and large (120 or more).

The average rank of programs with less than 70 enrollments was 38.10 ranks above the over-all average. The average rank of programs with more than 120 enrollments was 15.52 ranks below the over-all average. The average ranks of the small and large enrollment subgroups were 53.62 ranks removed from one another. The result of the Kruskal-Wallis one-way analysis of variance applied to these data was a chi-square of 34.28 at 2 degrees of freedom. The probability was less than .001 that these differences would occur from chance variations alone. The following table illustrates these differences.

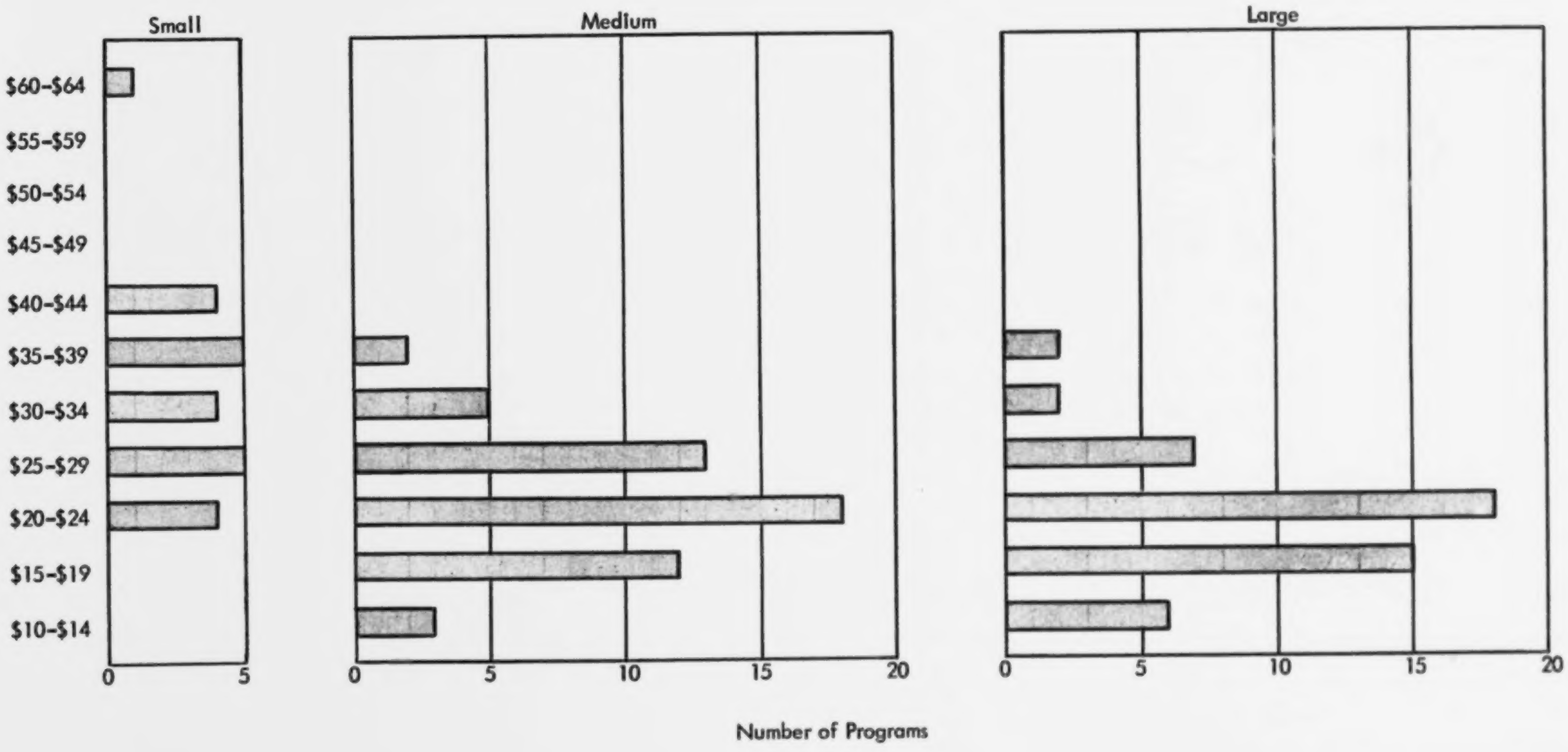
Subgroup by Enrollment Size	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational Functions	
		Average Rank	Average Rank Minus 63.50*
Small	23	101.60	38.10
Medium	53	61.58	-1.92
Large	50	47.98	-15.52

*The average rank of all (126) cases.

The results of further tests indicated that the cost of educational functions was (1) significantly lower in programs with 120 or more students than it was in programs with fewer than 120 students and (2) significantly higher in programs with less than 70 students than it was in programs with 70 or more students. Data pertaining to the two Mann-Whitney U tests of the significance appear in the following table.

Subgroup by Enrollment Size	Average Rank of Subgroup	Average of Ranks of Cases in All Other Subgroups	Standard Score (z)	Probability
Small	101.60	54.98	5.54	<.0001
Large	47.98	73.71	3.87	<.0002

FIGURE 5. GROSS COST OF EDUCATIONAL FUNCTIONS PER STUDENT-WEEK TO PARENT INSTITUTIONS, BY ENROLLMENT SIZE SUBGROUPS
(126 Programs)



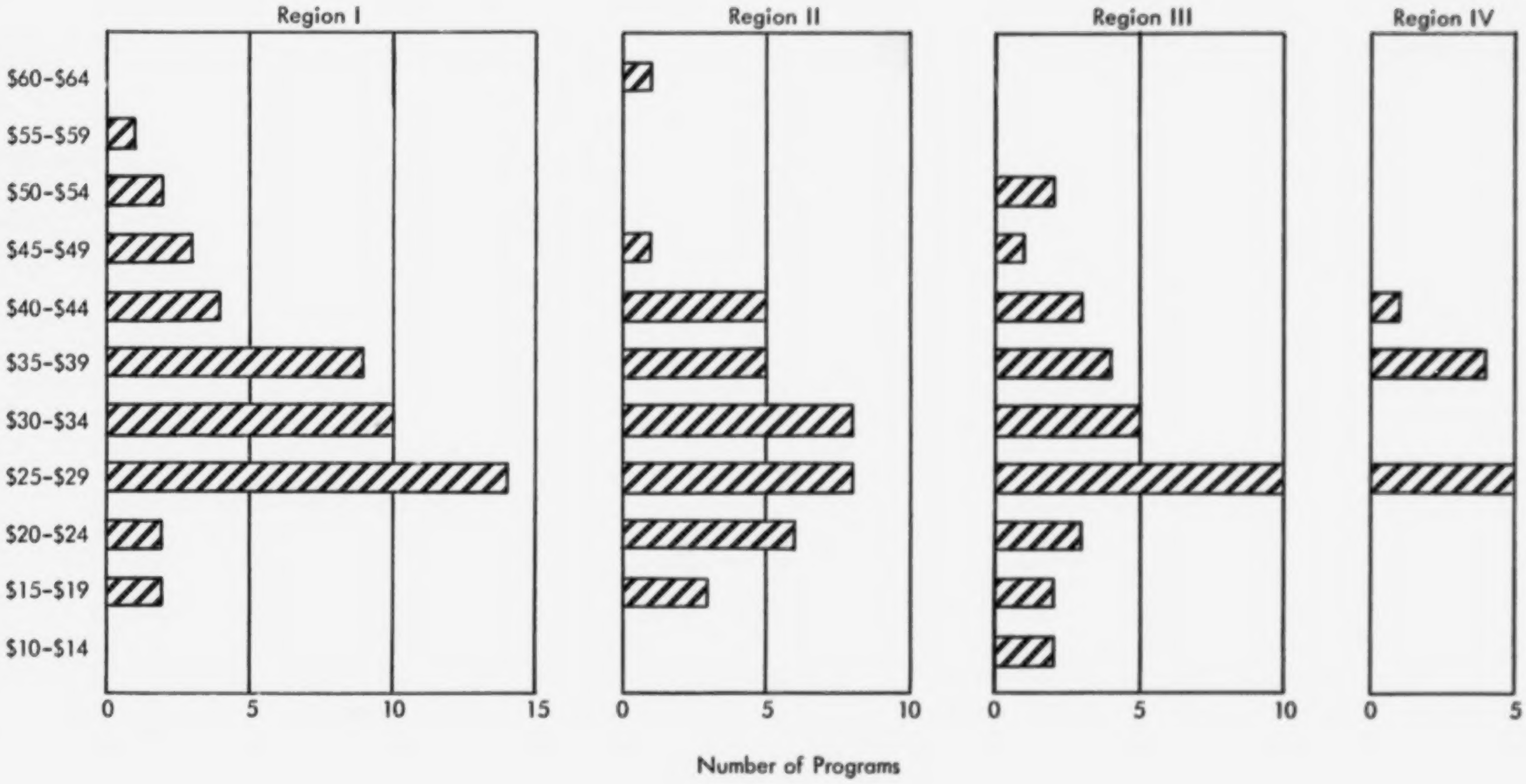
GROSS COST OF NONEDUCATIONAL FUNCTIONS

The 126 parent institutions were ranked as to cost of noneducational functions. The tests described under relationships of variables and educational-functions cost were repeated. The same relationship between cost and the independent variables geographic region and enrollment size that occurred in the case of educational functions did not occur in the case of noneducational functions.

Relationship of Geographic Region to Cost of Noneducational Functions

Figure 6 represents the distribution of noneducational-functions costs in each of the four NLN regions.

FIGURE 6. GROSS COST OF NONEDUCATIONAL FUNCTIONS PER STUDENT-WEEK TO PARENT INSTITUTIONS, BY REGIONAL SUBGROUPS
(126 Programs)



There was no evidence of a statistically significant relationship between noneducational-functions cost and geographic region.

The following table gives data pertaining to noneducational-functions cost by geographic region.

Subgroup by NLN Region	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Noneducational Functions: Average Rank	Rank of Subgroup as to Cost of Noneducational Functions: Average Rank Minus 63.50*
Region I	47	68.13	4.63
Region II	37	62.57	-0.93
Region III	32	56.66	-6.84
Region IV	10	67.10	3.60

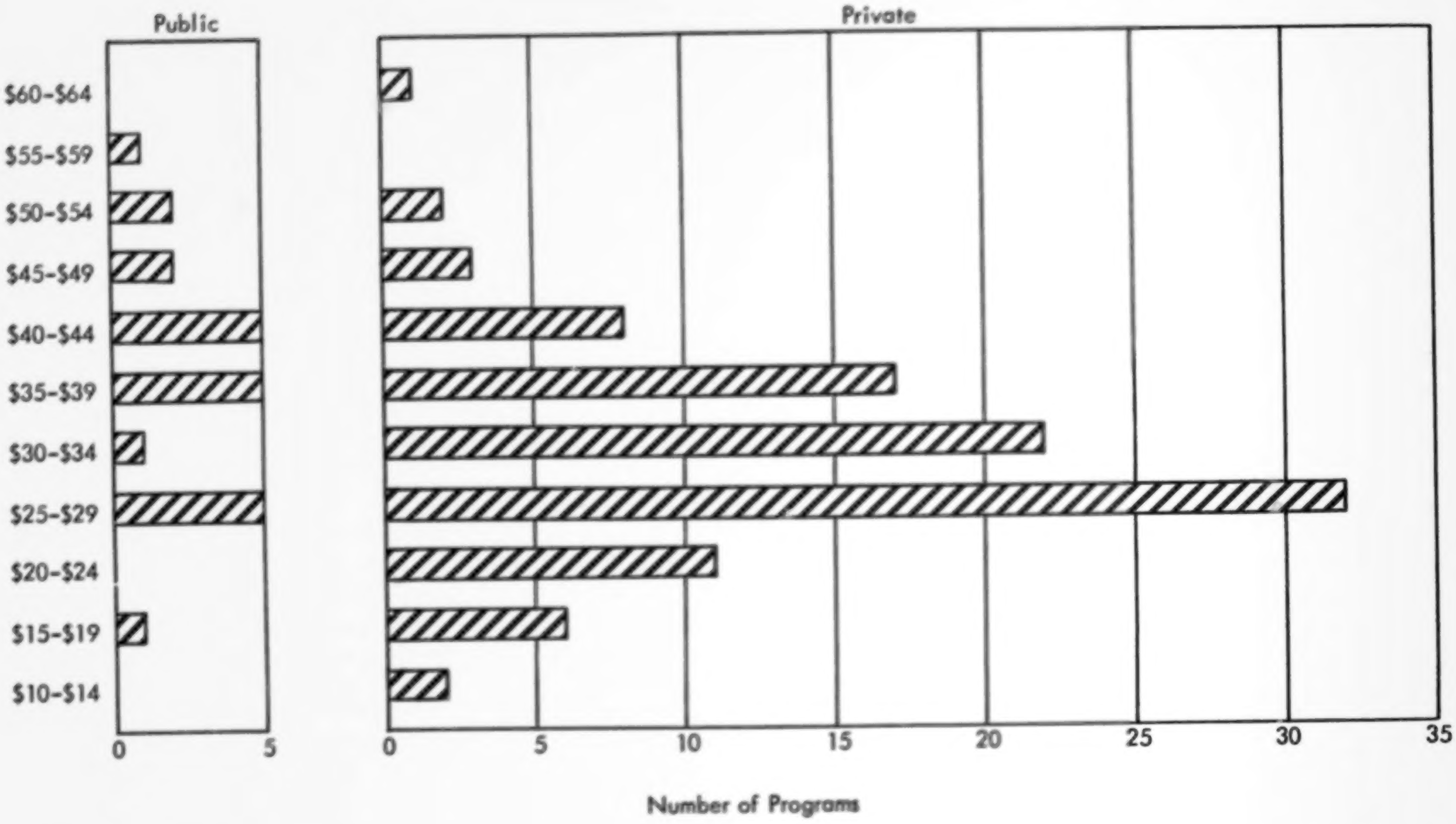
*The average rank of all (126) cases.

The result of the Kruskal-Wallis one-way analysis of variance applied to the ranks of the four subgroups indicated that the observed differences were not significant (chi-square = 2.00 at 3 degrees of freedom; $p > .50$). One can be relatively more certain of an absence of relationship between geographic region and noneducational-functions cost than of an absence of relationship between geographic region and educational-functions cost.

Relationship of Type of Control to Cost of Noneducational Functions

Figure 7 represents the distribution of noneducational-functions costs when the 126 institutions were divided into two subgroups by type of control, public control and private control.

FIGURE 7. GROSS COST OF NONEDUCATIONAL FUNCTIONS PER STUDENT-WEEK TO PARENT INSTITUTIONS, BY TYPE OF CONTROL
(126 Programs)



Significant differences were observed when the ranks of the 126 parent institutions as to gross cost of noneducational functions per student-week were sorted into subgroups according to type of control. The following table gives data pertaining to ranks in these subgroups.

Subgroup by Type of Control	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Noneducational Functions	
		Average Rank	Average Rank Minus 63.50*
Federal, state, and county government	10	77.10	13.60
City government	12	96.25	32.75
Private secular	61	59.28	-4.22
Private religious	43	57.19	-6.31

*The average rank of all (126) cases.

The Kruskal-Wallis one-way analysis of variance applied to the ranks in these subgroups resulted in a chi-square of 13.14 at 3 degrees of freedom, which was significant at the .01 level of probability.

While there were relatively few cases in the city-government subgroup, there was a significant difference between the ranks of this subgroup and those of all other cases considered as one subgroup. The results of four Mann-Whitney U tests for differences between each subgroup and all remaining cases considered as one subgroup are shown in the following table.

Subgroup by Type of Control	Average Rank of Subgroup	Average of Ranks of Cases in All Other Subgroups	Standard Score (z)	Probability
Federal, state, and county government	77.10	62.33	1.23	>.21
City government	96.25	60.05	3.27	<.002
Private secular	59.28	67.46	1.23	>.21
Private religious	57.19	66.77	1.40	>.15

A significant difference was observed when the ranks of the 126 parent institutions were divided into two subgroups by type of control, public control and private control. Data from the Mann-Whitney U test for these subgroups are as follows:

Subgroup by Type of Control	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Noneducational Functions	
		Average Rank	Average Rank Minus 63.50*
Public	22	87.55	24.05
Private	104	58.41	-5.09

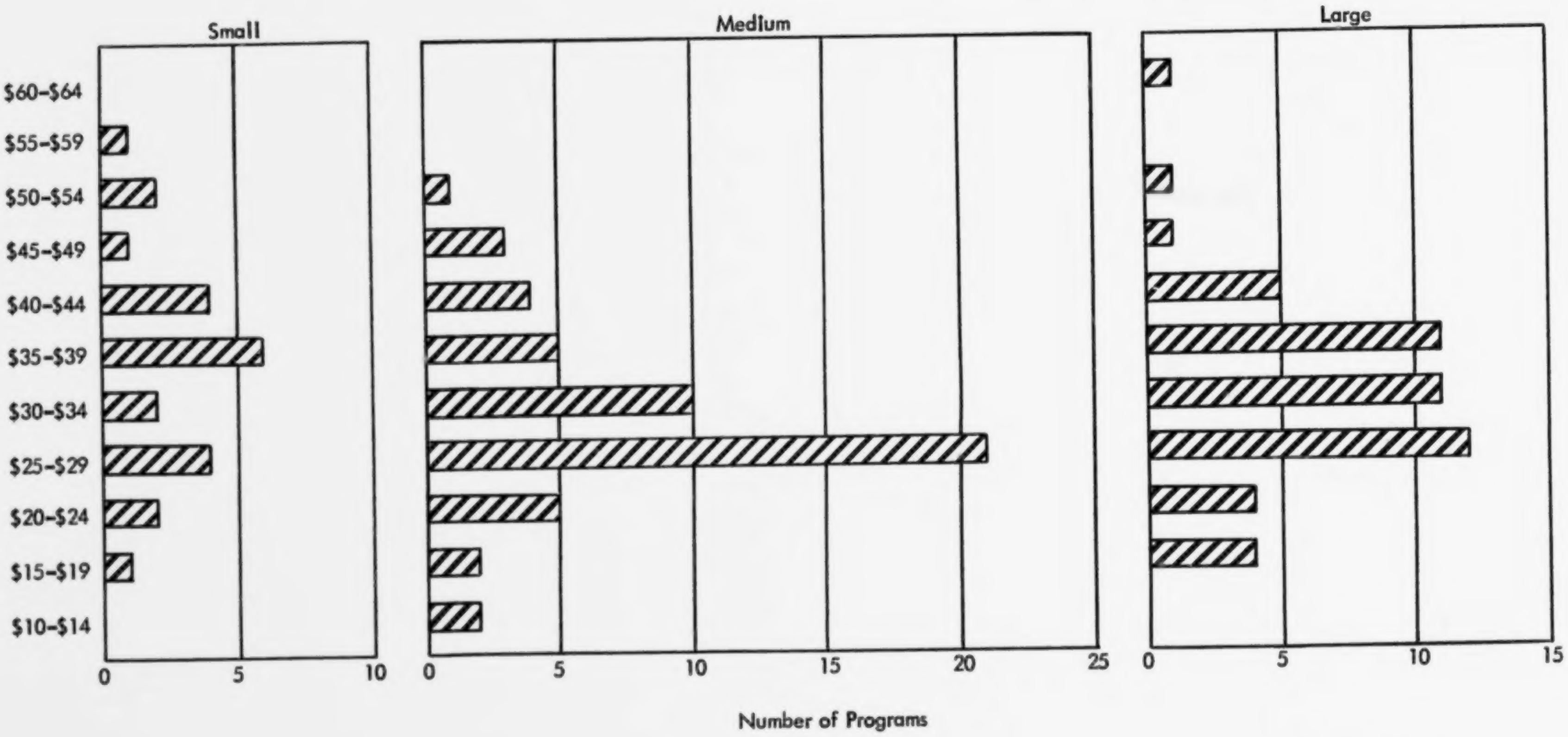
*The average rank of all (126) cases.

The resulting standard score (z) was 3.40, and the probability was less than .001.

Relationship of Enrollment Size to Cost of Noneducational Functions

Figure 8 shows the distribution of noneducational-functions costs in the three enrollment-size subgroups.

FIGURE 8. GROSS COST OF NONEDUCATIONAL FUNCTIONS PER STUDENT-WEEK TO PARENT INSTITUTIONS, BY ENROLLMENT SIZE SUBGROUPS
(126 Programs)



There were no statistically significant differences in the cost of noneducational functions among the three subgroups. The average ranks of these subgroups are shown in the following table.

Subgroup by Enrollment Size	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Noneducational Functions	
		Average Rank	Average Rank Minus 63.50*
Small	23	77.83	14.33
Medium	53	56.55	-6.95
Large	50	64.28	0.78

*The average rank of all (126) cases.

The result of the Kruskal-Wallis one-way analysis of variance applied to these ranks was a chi-square of 5.48 at 2 degrees of freedom ($p > .05$). Further analysis failed to show significant differences when each subgroup was compared with all other cases considered as one subgroup.

In the programs included in the study, differences in the gross cost to the parent institution for noneducational functions were related to type of control of the institution. In institutions under public control, especially in those under the control of a city government, the gross cost of noneducational functions was significantly higher than it was in institutions under other types of control.

GROSS COST OF EDUCATIONAL AND NONEDUCATIONAL FUNCTIONS

The total gross cost of the nursing program to the parent institution was the sum of the gross cost of the educational functions and the noneducational functions of the program. In the 126 institutions studied, there was considerable variance in the percent of the total cost that pertained to educational functions. This is illustrated by the low correlation ($r_s = .386$, Spearman rank correlation) between the gross cost of educational functions and the gross cost of noneducational functions.

A possible explanation of the low correlation between the two types of cost was that the parent institution with relatively high educational-functions costs had compensating relatively low noneducational-functions cost. If such compensations occurred frequently enough, the differences between costs (ranks) among the various subgroups when ranked as to total cost would diminish. In the subsequent analyses, there was no evidence of such a degree of frequency of compensation. There was, instead, evidence of significant differences between subgroups based on type of control and on enrollment size.

The separate distributions by subgroups under each variable are shown in Figures 9, 10, and 11.

FIGURE 9. GROSS COST OF EDUCATIONAL AND NONEDUCATIONAL FUNCTIONS PER STUDENT-WEEK TO PARENT INSTITUTIONS, BY REGIONAL SUBGROUPS
(126 Programs)

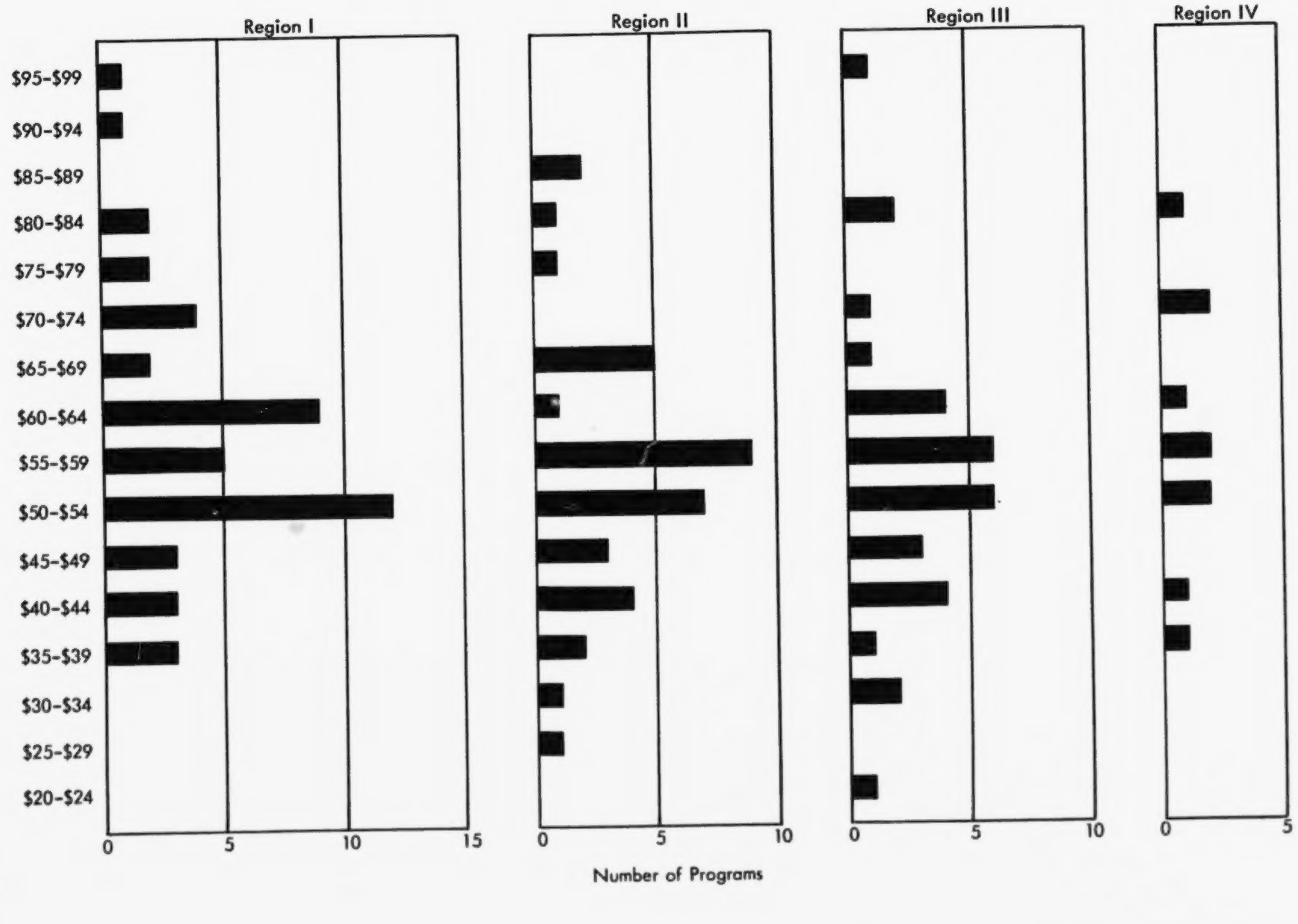
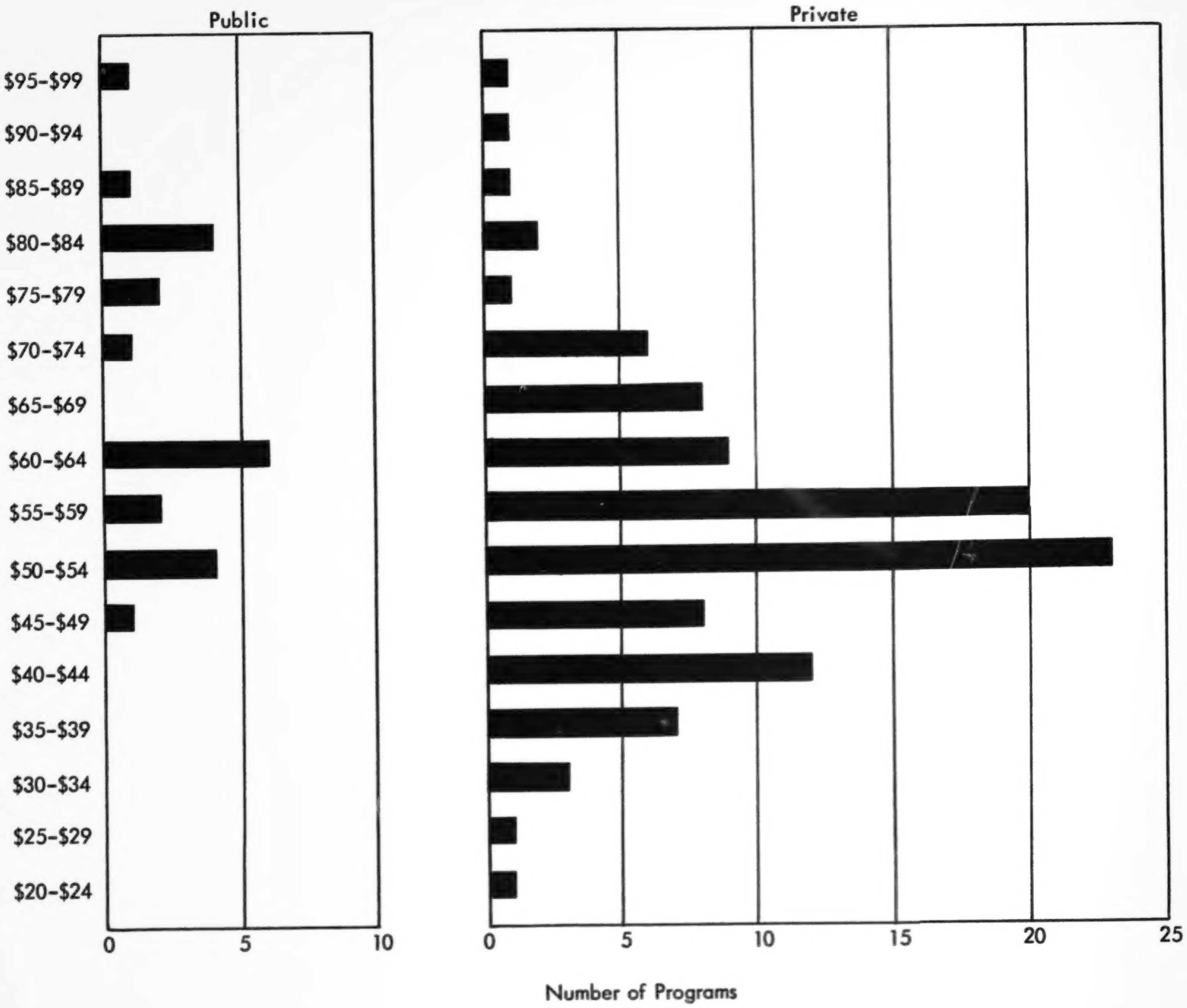


FIGURE 10. GROSS COST OF EDUCATIONAL AND NONEDUCATIONAL FUNCTIONS PER STUDENT-WEEK TO PARENT INSTITUTIONS, BY TYPE OF CONTROL
(126 Programs)



The gross costs of educational functions and noneducational functions were summed for each parent institution. Each institution was ranked according to the sum of these costs. The 126 ranks were sorted three times. When sorted as to geographic region, the average ranks of each subgroup were:

Region I	70.38
Region II	60.19
Region III	55.53
Region IV	68.90

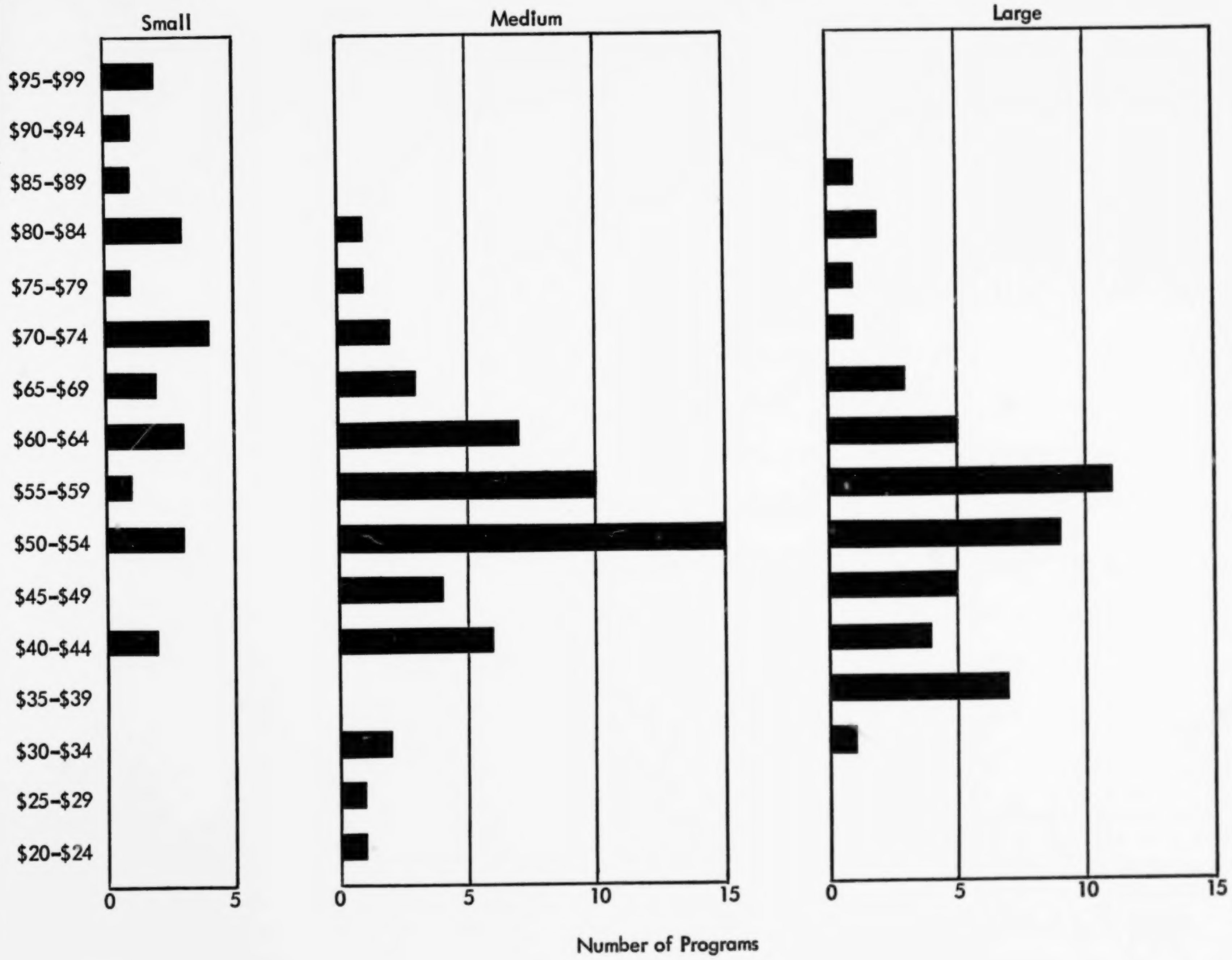
The Kruskal-Wallis one-way analysis of variance resulted in a chi-square of 3.85 at 3 degrees of freedom and a probability greater than .20.

When sorted as to type of control, the average ranks of each subgroup were:

Federal, state, and county government	76.70
City government	99.58
Private secular	59.49
Private religious	56.05

The Kruskal-Wallis one-way analysis of variance resulted in a chi-square of 15.55 at 3 degrees of freedom. These differences were significant at the .01 level of probability.

FIGURE 11. GROSS COST OF EDUCATIONAL AND NONEDUCATIONAL FUNCTIONS PER STUDENT-WEEK TO PARENT INSTITUTIONS, BY ENROLLMENT SIZE SUBGROUPS
(126 Programs)



When sorted as to enrollment size, the average ranks of each subgroup were:

Small	92.30
Medium	58.45
Large	55.60

The Kruskal-Wallis one-way analysis of variance resulted in a chi-square of 17.66 at 2 degrees of freedom. These differences were significant at the .001 level of probability.

When Mann-Whitney U tests were used to compare the ranks of the cost of educational and noneducational functions, the findings were as follows:

1. Costs in institutions under city government control were significantly higher than costs in institutions under any other type of control (standard score (z) = 3.60; $p < .0004$).
2. Costs in institutions under any type of public control were significantly higher than costs in institutions under any type of private control (standard score (z) = 3.72; $p < .0003$). The average rank for the public-control subgroup was 89.18; that for the private-control subgroup was 58.07.
3. Costs in programs with fewer than 70 students were significantly higher than costs in programs with 70 or more students (standard score (z) = 4.18; $p < .0001$).
4. Costs in programs with 120 or more students were significantly lower than costs in programs with fewer than 120 students (standard score (z) = 1.96; $p < .05$).

SIGNIFICANT RELATIONSHIPS BETWEEN VARIABLES AND COSTS TO PARENT INSTITUTIONS

The relationships of independent variables to the cost of educational functions, to the cost of noneducational functions, and to the cost of educational and noneducational functions are summarized in the following table.

Type of Cost	Significant* Differences in Cost					
	By Region		By Type of Control		By Enrollment Size	
	Among All Subgroups	In Subgroups Considered Separately	Among All Subgroups	In Subgroups Considered Separately	Among All Subgroups	In Subgroups Considered Separately
Educational-functions cost	No	Higher for Region I	Yes	Higher for city government and public Lower for private	Yes	Higher for small Lower for large
Noneducational-functions cost	No	No	Yes	Higher for city government and public Lower for private	No	No
Educational and noneducational-functions cost	No	No	Yes	Higher for city government and public Lower for private	Yes	Higher for small Lower for large

*At the .05 level of probability.

RELATIONSHIPS OF COMBINATIONS OF VARIABLES TO COSTS TO PARENT INSTITUTIONS

The gross-cost ranks of the 126 parent institutions were separated into six subgroups representing combinations of two variables, type of control and enrollment size. That is, institutions under public control were divided into the three enrollment-size subgroups--small, medium, and large--and institutions under private control were divided into the same three subgroups. The ranks of the six subgroups were tested for significant differences among all subgroups and for significant differences between each subgroup and all other cases considered as one subgroup. The six subgroups were ranked for the gross cost of (1) educational functions, (2) noneducational functions, and (3) educational and noneducational functions.

The average-rank data and the results of the tests of significance for the first ranking basis, gross cost of educational functions, were as follows:

Subgroup by Type of Control and Enrollment Size	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational Functions		Standard Score ($\underline{z}$)	Probability
		Average Rank	Average Rank Minus 63.50*		
Public, small	8	110.00	46.50	3.72	< .003
Public, medium	7	79.14	15.64	1.17	> .24
Public, large	7	64.00	0.50	0.04	> .93
Private, small	15	97.19	33.69	3.81	< .0002
Private, medium	45	58.46	-5.04	1.15	> .25
Private, large	44	46.14	-17.36	3.91	< .0001

*The average rank of all (126) cases.

The results of the Kruskal-Wallis one-way analysis of variance for differences among all subgroups was a chi-square of 37.81 at 5 degrees of freedom, which was significant at the .001 level of probability.

The above data indicate that the highest average rank (therefore, the highest educational-functions gross costs) occurred in the subgroup public control with small-size enrollment; the lowest, in the subgroup private control with large-size enrollment. The average ranks of these two subgroups are 63.86 ranks removed from one another.

Data in the above table give some indication of the interaction of the variable type of control with the variable enrollment size. When the two variables were considered separately, it appeared that gross costs of educational functions were significantly higher in institutions under public control than in institutions under private control and that programs of small-size enrollment were significantly more costly than were all other cases considered as one subgroup, while those of large-size enrollment were significantly less costly than were all other cases so considered.

The average ranks in the above table indicate that enrollment size had a more marked effect upon the cost of educational functions than did type of control. The average rank of programs under private control with small-size enrollments is greater than the average rank of programs under public control with medium-size or with large-size enrollments.

The results of the tests of significance indicated that:

1. There were significant differences in educational costs among all six subgroups.

2. The cost of educational functions in programs of small-size enrollment in institutions under public control was significantly higher than in all other cases considered as one subgroup.

3. The cost of educational functions in programs of small-size enrollment in institutions under private control was significantly higher than in all other cases considered as one subgroup.[1]

4. The cost of educational functions in programs of large-size enrollment under private control was significantly lower than in all other cases considered as one subgroup.

The following table shows similar data pertaining to noneducational-functions costs.

Subgroup by Type of Control and Enrollment Size	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Noneducational Functions		Standard Score (z)	Probability
		Average Rank	Average Rank Minus 63.50*		
Public, small	8	87.13	23.63	1.89	>.05
Public, medium	7	79.14	15.64	1.12	>.26
Public, large	7	96.43	32.93	2.46	<.02
Private, small	15	75.79	12.29	1.39	>.16
Private, medium	45	53.31	-10.19	2.33	<.02
Private, large	44	57.70	-5.80	1.31	>.19

*The average rank of all (126) cases.

The result of the Kruskal-Wallis one-way analysis of variance for differences among all subgroups was a chi-square of 16.56 at 5 degrees of freedom, which was significant at the .01 level of probability.

When the variables type of control and enrollment size were considered separately, it appeared that gross costs of noneducational functions were significantly higher in institutions under public control than in institutions under private control and that enrollment size had no significant relationship to this cost.

The above table indicates that programs of large-size enrollment under public control had significantly higher noneducational-functions costs than did all other cases considered as one subgroup and that programs of medium-size enrollment under private control had significantly lower noneducational-functions costs than did all other cases so considered.

---

[1] It will be noted that the average rank of the subgroup public and small is 46.50 ranks above the over-all average rank and that the average rank of the subgroup private and small is 33.69 ranks above. Nevertheless, the latter difference is of greater statistical significance than is the former. This illustrates the effect of number of cases upon the results of tests for significance.

When the variable enrollment size was considered alone or together with type of control, there were no indications of a linear relationship between enrollment size and the cost of noneducational functions. That is, there may well be a point at which further increase in the enrollment is related to a higher cost per student enrolled for food, lodging, and other noneducational functions.

The following table differs from the two preceding ones in that the ranks pertain to the sum of educational-functions cost plus noneducational-functions cost. As was the case when each cost was considered separately, there were statistically significant differences among the ranks of the six subgroups.

Subgroup by Type of Control and Enrollment Size	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational and Noneducational Functions		Standard Score (z)	Probability
		Average Rank	Average Rank Minus 63.50*		
Public, small	8	97.63	34.13	2.73	< .01
Public, medium	7	83.86	20.36	1.52	> .12
Public, large	7	84.86	21.36	1.59	> .11
Private, small	15	89.46	25.96	2.93	< .004
Private, medium	45	55.79	-7.71	1.76	> .07
Private, large	44	49.68	-13.82	3.11	< .002

*The average rank of all (126) cases.

The result of the Kruskal-Wallis one-way analysis of variance for differences among all subgroups was a chi-square of 27.42 at 5 degrees of freedom, which was significant at the .001 level of probability.

Three of the six subgroups differed significantly from all other cases treated as one subgroup in the cost of educational and noneducational functions in that:

1. Programs of small-size enrollment in institutions under public control were more costly;

2. Programs of large-size enrollment in institutions under private control were less costly;

3. Programs of small-size enrollment in institutions under private control were more costly.

Generally, the results of tests for the effect of the two variables considered together upon the cost of diploma programs to parent institutions paralleled the results of tests for the effect of these variables considered separately. In the case of educational-functions cost, there was evidence that enrollment size had a more marked effect upon cost than did the type of control of the institution. There was some evidence that enrollment size had an interacting effect with type of control upon the cost of noneducational functions. This effect was not in the same direction as it was in the case of educational-functions costs.

However, the results of considering the variables in combination agree with two predictions that could have been drawn from previous findings that resulted from considering each variable separately. These two predictions are:

1. Programs of small-size enrollment in institutions under public control tend to be the most costly programs.

2. Programs of large-size enrollment in institutions under private control tend to be the least costly programs.

RELATIONSHIP OF GROSS COST TO NLN ACCREDITATION

Whether a diploma program had or lacked NLN accreditation was not a factor in selecting programs for the study. It happened that 104 (82.5 percent) of the 126 programs selected had NLN accreditation at the time of the study. During any year of the study, no more than 65 percent of the population of diploma programs held NLN accreditation.

Some of the 22 study programs that lacked NLN accreditation applied for accreditation within less than two years of the completion of their cost analyses. To say that a program lacks NLN accreditation does not necessarily imply that the program lacks quality. It may mean that the program has never sought accreditation and has never been subjected to this kind of evaluation. It may indicate either a lack of quality or a lack of knowledge of the quality of the program.

The following data indicate that in the programs selected for study, accreditation status did not have a significant relationship to the gross cost of nursing education.

Type of Cost	Average Rank of 104 Programs with NLN Accreditation	Average Rank of 22 Programs Lacking NLN Accreditation	Probability That Differences Were Unrelated to Accreditation Status
Educational-functions cost	62.15	69.86	> .36
Noneducational-functions cost	64.24	60.00	> .61
Educational and noneducational-functions cost	63.13	65.27	> .80

In none of the above test results was there significant evidence that the cost of any functional part of the program was more or less expensive in programs holding NLN accreditation. The two accreditation subgroups were practically identical in that 50 percent of each fell above the median cost of educational functions and 50 percent fell below it. This was true for noneducational functions as well.

RELATIONSHIP OF GROSS COST TO THE NUMBER OF COOPERATING AGENCIES USED

The aim of using cost per student-week as the unit of cost was to secure comparable data about each program. The programs varied somewhat in the number of weeks of vacation and more so in the number of weeks that the student spent in courses given by cooperating agencies. Ten (8 percent) of the programs used no cooperating agencies; 103 (82 percent) used two or fewer or no cooperating agencies; 123 (98 percent) used three or fewer or no cooperating agencies.

The ranks of cost per student-week in the parent institutions were sorted into subgroups according to the number of cooperating agencies used. The relationships being investigated were those between subgroups by number of agencies used and cost per student-week during the time that the students were in the parent institution.

The following data indicate that it is relatively less expensive to provide a student-week of educational functions when the parent institution provides instruction in all areas of the program and no cooperating agencies are involved.

Subgroup by Number of Cooperating Agencies Used	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational Functions	
		Average Rank	Average Rank Minus 63.50*
None	10	47.60	-15.90
One	48	61.48	-2.02
Two	45	61.49	-2.01
Three or more	23	78.57	15.07

*The average rank of all (126) cases.

However, differences among the above subgroups were not significant (chi-square = 6.09 at 3 degrees of freedom; $p > .10$).

When each subgroup was compared with all other cases considered as one subgroup, the cost per student-week to the parent agency was significantly higher in those programs using three or more cooperating agencies (standard score ($\underline{z}$) = 2.19; $p < .03$).

A somewhat different pattern of average ranks appeared when the ranking was based upon the cost of noneducational functions.

Unlike the cost of educational functions, the cost of noneducational functions was relatively higher in programs using none and those using three or more cooperating agencies. Data in the following table illustrate this difference.

Subgroup by Number of Cooperating Agencies Used	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Noneducational Functions	
		Average Rank	Average Rank Minus 63.50*
None	10	69.00	5.50
One	48	60.67	-2.83
Two	45	55.40	-8.10
Three or more	23	82.87	19.37

*The average rank of all (126) cases.

There were significant differences among all of the above subgroups in the cost per student-week for noneducational functions. The Kruskal-Wallis one-way analysis of variance resulted in a chi-square of 9.20 at 3 degrees of freedom, which was significant at the .05 level of probability.

When each subgroup was compared with all other cases considered as one subgroup, the cost of noneducational functions was significantly higher in parent institutions using three or more cooperating agencies (standard score (z) = 2.82; $p < .005$). When the 126 ranks were divided into two subgroups, those of programs using either one or two cooperating agencies and those using none or more than two agencies, significant differences were observed (standard score (z) = 2.77; $p < .006$).

Similar data for these subgroups when the ranking was based upon the sum of the cost of educational functions plus the cost of noneducational functions were as follows:

Subgroup by Number of Cooperating Agencies Used	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational and Noneducational Functions	
		Average Rank	Average Rank Minus 63.50*
None	10	61.10	-2.40
One	48	60.08	-3.42
Two	45	56.80	-6.70
Three or more	23	84.75	21.25

*The average rank of all (126) cases.

Differences among the subgroups were significant at the .05 level of probability (chi-square = 9.79 at 3 degrees of freedom).

When each subgroup was compared with all other cases considered as one subgroup, the cost of educational and noneducational functions per student-week was significantly greater in institutions using three or more agencies (standard score (z) = 3.09; $p < .003$).

The number of cooperating agencies used was related to variations in the cost of noneducational functions and in the sum of the cost of noneducational functions plus the cost of educational functions. Programs using three or more cooperating agencies had significantly higher costs for both educational and noneducational functions and for the sum of these functions. In programs that utilized either one or two cooperating agencies, the cost of noneducational functions was significantly less than it was in programs that used none or more than two cooperating agencies.

CHARACTERISTICS OF THE MOST COSTLY AND THE LEAST COSTLY PROGRAMS

This part of the study entailed a search for differences between the most costly and the least costly programs in terms of cost characteristics. Two groups--roughly, the highest-ranking and the lowest-ranking fifths of all cases--were chosen. Comparing the highest and lowest fifths of a group of this size automatically ensured a statistically significant difference in cost between the two groups. Comparisons of differences between them were limited to common-sense observations and did not entail statistical analyses for significance.

With several exceptions, the 25 most costly programs and the 25 least costly programs were the 25 that ranked highest and lowest, respectively, in a particular cost to the parent institution per student-week. Exceptions were made for either of two reasons: (1) the parent institution served as a cooperating agency to students in other diploma programs or (2) the parent institution lacked the characteristic used for comparison.

The comparisons pertained to costs to the parent institution for both educational functions and noneducational functions. The 25 most costly programs with respect to educational functions were not necessarily the 25 most costly programs with respect to noneducational functions. This applies similarly to the least costly programs.

In making the following comparisons, each group of 25 programs was treated as a unit. That is, the totals of the various educational-functions costs for the 25 least costly programs were summed, as were the totals of those functions for the 25 most costly programs. The same procedure was carried out to obtain the total noneducational-functions cost for each group. Data for an item such as the area (square feet) used for educational functions in the 25 most costly programs were summed to find the total area for the unit, as were similar data for the 25 least costly programs. The costs of maintaining the educational areas (cost of plant operation) in each group were also totaled. The plant operations cost per square foot for each group was not determined by averaging the separate costs per square foot in each institution, but by dividing the total cost of plant operation by the total square footage. For all of the items selected for comparison, the data collected from each group were treated as described.

Comparisons Pertaining to the Cost of Educational Functions

In the 126 study programs, both the typical student and the average student accumulated 43 weeks per year in the parent institution. The term student-equivalent refers to the typical student in this respect. The number of student-equivalents was obtained by dividing the total number of student-weeks by 43. With respect to educational functions, the result for the group of least costly programs was 3,573 and the result for the group of most costly programs was 1,814.

The following table shows various units of educational-functions cost for the two groups.

Group	Educational-Functions Cost			
	Total	Per Program	Per Student-Equivalent	Per Student-Week
Least costly programs	$2,542,755	$101,710	$ 712	$16.55
Most costly programs	2,544,716	101,789	1,403	32.62

The average cost per program is practically the same for both groups (the cost for the most costly programs was less than one-tenth of 1 percent greater than the cost for the least costly programs). However, the 25 least costly programs were providing educational functions for nearly twice as many students (1.97 times as many). The least costly programs had an average enrollment of 143 students per program; the most costly had an average enrollment of 73 students per program. Consequently, the cost per student-equivalent or the cost per student-week for the most costly programs was 97 percent higher than that for the least costly programs.

As the following table shows, costs related to general institutional expense in parent institutions offering the most costly programs were somewhat greater than those in institutions offering the least costly programs.

Cost Item	Unit Cost for Group	
	Least Costly Programs	Most Costly Programs
Plant Operation (per square foot)	$1.15	$1.19
Housekeeping (per square foot)	0.84	0.97
Administration (per dollar spent)	0.114	0.111

The most costly programs, as compared with the least costly, had a 4 percent higher cost for plant operation, a 16 percent higher cost for housekeeping, and a 3 percent lower cost for administration. However, the differences were not outstanding.

In contrast, costs related to enrollment size were considerably greater for the most costly programs than for the least costly group. The expenditure for educational salaries per student-equivalent was $422 in the least costly programs and $818 in the most costly programs, an increase of 94 percent over the former figure. The educational areas were more costly to maintain in the latter group, not because of plant operation costs as such, but because of the greater classroom area per student enrolled in these programs. In the least costly programs, the classroom space was 58 square feet per student; in the most costly programs, it was 102 square feet per student, an increase of 76 percent over the former figure.

sons: (1) the parent institution served as a cooperating agency to students in other diploma programs or (2) the parent institution lacked the characteristic used for comparison.

The comparisons pertained to costs to the parent institution for both educational functions and noneducational functions. The 25 most costly programs with respect to educational functions were not necessarily the 25 most costly programs with respect to noneducational functions. This applies similarly to the least costly programs.

In making the following comparisons, each group of 25 programs was treated as a unit. That is, the totals of the various educational-functions costs for the 25 least costly programs were summed, as were the totals of those functions for the 25 most costly programs. The same procedure was carried out to obtain the total noneducational-functions cost for each group. Data for an item such as the area (square feet) used for educational functions in the 25 most costly programs were summed to find the total area for the unit, as were similar data for the 25 least costly programs. The costs of maintaining the educational areas (cost of plant operation) in each group were also totaled. The plant operations cost per square foot for each group was not determined by averaging the separate costs per square foot in each institution, but by dividing the total cost of plant operation by the total square footage. For all of the items selected for comparison, the data collected from each group were treated as described.

Comparisons Pertaining to the Cost of Educational Functions

In the 126 study programs, both the typical student and the average student accumulated 43 weeks per year in the parent institution. The term student-equivalent refers to the typical student in this respect. The number of student-equivalents was obtained by dividing the total number of student-weeks by 43. With respect to educational functions, the result for the group of least costly programs was 3,573 and the result for the group of most costly programs was 1,814.

The following table shows various units of educational-functions cost for the two groups.

Group	Educational-Functions Cost			
	Total	Per Program	Per Student-Equivalent	Per Student-Week
Least costly programs	$2,542,755	$101,710	$ 712	$16.55
Most costly programs	2,544,716	101,789	1,403	32.62

The average cost per program is practically the same for both groups (the cost for the most costly programs was less than one-tenth of 1 percent greater than the cost for the least costly programs). However, the 25 least costly programs were providing educational functions for nearly twice as many students (1.97 times as many). The least costly programs had an average enrollment of 143 students per program; the most costly had an average enrollment of 73 students per program. Consequently, the cost per student-equivalent or the cost per student-week for the most costly programs was 97 percent higher than that for the least costly programs.

As the following table shows, costs related to general institutional expense in parent institutions offering the most costly programs were somewhat greater than those in institutions offering the least costly programs.

Cost Item	Unit Cost for Group	
	Least Costly Programs	Most Costly Programs
Plant Operation (per square foot)	$1.15	$1.19
Housekeeping (per square foot)	0.84	0.97
Administration (per dollar spent)	0.114	0.111

The most costly programs, as compared with the least costly, had a 4 percent higher cost for plant operation, a 16 percent higher cost for housekeeping, and a 3 percent lower cost for administration. However, the differences were not outstanding.

In contrast, costs related to enrollment size were considerably greater for the most costly programs than for the least costly group. The expenditure for educational salaries per student-equivalent was $422 in the least costly programs and $818 in the most costly programs, an increase of 94 percent over the former figure. The educational areas were more costly to maintain in the latter group, not because of plant operation costs as such, but because of the greater classroom area per student enrolled in these programs. In the least costly programs, the classroom space was 58 square feet per student; in the most costly programs, it was 102 square feet per student, an increase of 76 percent over the former figure.

The difference in instructors' salaries per student is important in that such salaries accounted for over half of the total educational-functions cost in both groups (59 percent in the least costly programs and 58 percent in the most costly programs).

In the cost analysis method used, the item Educational Salaries does not include staff benefits or additional compensations such as free meals and laundry. As the following data show, the costs of additional benefits were greater in the most costly programs.

Cost Item	Unit Cost for Group	
	Least Costly Programs	Most Costly Programs
Staff Benefits (per dollar of salary)	$0.030	$0.048
Additional Compensations (per dollar of salary)	0.019	0.040

The most costly programs, as compared with the least costly, had a 60 percent higher cost for staff benefits and an 111 percent higher cost for compensations not included in the cost center Staff Benefits.

However, in both groups of programs, these items accounted for less than 3 percent of the total cost of educational functions. Thus, the greater expenditure for additional compensations in the most costly programs accounted for relatively little of the difference in educational-functions costs between the two groups. The least costly programs had little or no cost under this heading. In 92 percent of these programs, the amount expended for additional compensations was insufficient to provide one meal a day per instructor. This was true for less than 65 percent of the most costly programs.

Most of the differences in the cost of educational functions seemed to be related to the difference in student-weeks or student-equivalents per program.

Comparisons Pertaining to the Cost of Noneducational Functions

Unlike the findings for educational-functions costs, the number of student-equivalents for the most costly group of programs (2,854) was practically identical with that for the least costly group (2,715).

The following table shows pronounced differences between the two groups.

Group	Noneducational-Functions Cost			
	Total	Per Program	Per Student-Equivalent	Per Student-Week
Least costly programs	$2,535,424	$101,417	$ 934	$21.72
Most costly programs	5,187,641	207,506	1,818	42.27

Unlike the cost of educational functions, the cost of noneducational functions per program was twice as great for the group of most costly programs as it was for the group of least costly programs. The least costly programs were providing noneducational functions for somewhat fewer students than were the most costly programs. The cost per student-equivalent was roughly twice (1.95 times) as great for the most costly programs as the least costly programs. In this instance, the difference did not seem to be related to enrollment size. The least costly programs had an average of 109 student-equivalents per program, and the most costly had an average of 114. In both groups of programs, the costs of meals and residence accounted for 80 percent or more of all noneducational costs.

Cost Item	Total Cost for Group		Cost of Item Divided by Cost of Noneducational Functions (in Percent)	
	Least Costly Programs	Most Costly Programs	Least Costly Programs	Most Costly Programs
Meals	$1,072,327	$2,199,215	42.3	42.4
Residence	955,505	2,042,479	37.7	39.4
Meals and residence	2,027,832	4,241,694	80.0	81.8

Both groups were similar in the percent of total cost expended for meals and the total cost expended for residence.

There were pronounced differences between the cost of meals and residence per student-week in the two groups, as the following table shows.

Cost Item	Unit Cost for Group	
	Least Costly Programs	Most Costly Programs
Meals (per student-week)	$ 9.19	$17.92
Residence (per student-week)	8.18	16.64
Meals and residence (per student-week)	17.37	34.56

The unit cost of providing either or both of these services for the most costly programs was roughly twice that for the least costly programs. For the most costly programs, the cost of meals was 95 percent higher, the cost of residence 103 percent higher, and the cost of meals and residence 99 percent higher. The greater meal cost was not a function of the number of meals served. A similar number of meals per student-week was served in all institutions. Some of the relatively greater residence costs could be accounted for by the residence and other noneducational areas allotted per student-equivalent. This allotment was 204 square feet in the least costly programs and 297 square feet, or 46 percent more, in the most costly programs. To a considerable degree, the higher unit costs for meals and residence in the most costly programs seemed to be related to the fact that costs for institution-wide services in the institutions that offered these programs were higher than such costs in the parent institutions of the least costly programs.

The following table shows the differences in the unit costs of general services for the two groups.

Cost Item	Unit Cost for Group	
	Least Costly Programs	Most Costly Programs
Plant Operation (per square foot)	$0.99	$1.34
Housekeeping (per square foot)	0.75	1.07
Staff Benefits (per dollar of salary)	0.030	0.048
Administration (per dollar spent)	0.124	0.282

The cost of plant operation in the most costly programs was 35 percent higher than that in the least costly programs. Similarly, the cost of housekeeping was 43 percent higher, the cost of staff benefits was 60 percent higher, and the cost of administration was 127 percent higher.

The costs of the above items are commonly referred to as overhead costs. As such, they affect the cost of noneducational functions as direct allocations and also affect the cost indirectly in that they are a part of most of the other allocations. For example, the last item in the preceding table, administrative cost per dollar spent, refers to a cost center that was closed out relatively early in the cost analysis. Thus, administrative costs were a part of the cost of most of the other allocated costs.

Two items that together constituted approximately 7 percent of the noneducational-functions costs in each group of programs were the costs of health service and laundry. As is shown in the following table, both of these costs were much higher in the 25 most costly programs.

Cost Item	Unit Cost for Group	
	Least Costly Programs	Most Costly Programs
Health Service (per student-week)	$ 3.86	$ 6.80
Laundry (per student-equivalent)	30.13	58.02

For the most costly programs, health service costs were 76 percent higher and laundry costs were 93 percent higher.

Comparisons of data from the 25 most costly and the 25 least costly programs indicated that educational-functions costs were influenced most by the number of students enrolled in each program and that noneducational-functions costs were influenced most by relatively high over-all costs in the parent institution. These findings were in line with the earlier finding that enrollment size had a significant inverse relationship to the cost of educational functions but not to the cost of noneducational functions. Statistical analysis of the two variables considered in combination, type of control and enrollment size, revealed that enrollment size had a more marked effect upon the cost of educational functions. Comparisons of most costly and least costly programs gave evidence that supported the previously cited finding that there were no indications of a linear relationship between enrollment size and noneducational-functions cost. In other words, there was no evidence to support the contention that increasing the size of enrollment results in lower noneducational-functions cost per student.

SUPPLEMENTARY TABLE

Table 3 at the end of this section lists cost data by individual institution. The data are arranged in order of increasing cost of educational and noneducational functions of the program per student-week.

Although the institution is not identified by name, some of its characteristics are indicated in a column headed Code Number. Each code number can be read as a profile of the characteristics of the institution. The code number consists of a series of seven symbols. Following is an explanation of their meanings.

The first symbol refers to the year in which the fiscal year of the cost analysis ended. The symbols are the capital letters A through D. Their meanings are:

A = ending 1959.
B = ending 1960.
C = ending 1961.
D = ending 1962.

The second symbol refers to the enrollment size of the program. The symbols are the three capital letters S, M, and L. Their meanings are:

S = Small (less than 70 enrolled).
M = Medium (from 70 to 120 enrolled).
L = Large (120 or more enrolled).

The third symbol refers to the NLN geographic region in which the parent institution was located. The symbols are the arabic numerals 1, 2, 3, and 4, which designate NLN Regions I, II, III, and IV, respectively.

The fourth symbol refers to the service classification of the institution. The symbols are the arabic numerals 1 through 7. Their meanings are:

1 = General.
2 = Psychiatric.
3 = Communicable disease (including tuberculosis).
4 = Maternity.
5 = Children's.
6 = Other specialties.
7 = Combinations of the above.

The fifth symbol refers to the type of administrative control of the parent institution. The symbols are the arabic numerals 1 through 6. Their meanings are:

1 = Public control by the federal government.
2 = Public control by a state government.
3 = Public control by a county government.
4 = Public control by a city government.
5 = Private control by a secular group.
6 = Private control by a religious sect.

The sixth symbol refers to combinations of characteristics that pertain to income. The symbols are the lower case letters a through p. Each symbol refers to two characteristics, the type of function or functions for which income from students was intended and source or sources of income other than student fees. The meanings of the symbols are shown in the following table.

Symbol	Characteristics Designated	
	Function(s) for Which Students Were Charged	Source(s) Other Than Students of Income of $1,000 or More Earmarked for Diploma Program
a	educational and noneducational	government and private
b	noneducational	government and private
c	educational	government and private
d	neither	government and private
e	educational and noneducational	private
f	noneducational only	private
g	educational only	private
h	neither	private
i	educational and noneducational	government
j	noneducational	government
k	educational	government
l	neither	government
m	educational and noneducational	none
n	noneducational	none
o	educational	none
p	neither	none

The seventh symbol does not refer to pertinent characteristics but was used to identify replications of a possible combination of the six preceding symbols. These final numerals were assigned at random.

To illustrate, the symbols in the code number BM315o1 signify that:

(B). The fiscal year of the cost analysis ended in 1960.
(M). From 70 to 120 students were enrolled in the diploma program.
(3). The parent institution was located in NLN Region III.
(1). The parent institution was a general hospital.
(5). The parent institution was controlled administratively by a private secular organization.
(o). Identifiable income was limited to student fees and was specified for only the educational functions of the program.
(1). This case was the first chosen at random of cases with the foregoing characteristics.

TABLE 3. GROSS COSTS OF DIPLOMA PROGRAMS TO PARENT INSTITUTIONS

CODE NUMBER	STUDENT WEEKS	EDUCATIONAL-FUNCTIONS COST		NONEDUCATIONAL-FUNCTIONS COST		COST OF BOTH FUNCTIONS	
		FOR ALL STUDENTS	PER STUDENT-WEEK	FOR ALL STUDENTS	PER STUDENT-WEEK	FOR ALL STUDENTS	PER STUDENT-WEEK
BM315o1	3,456	$ 42,199	$12.21	$ 42,588	$12.32	$ 84,787	$24.53
CM216m6	4,284	58,434	13.64	67,009	15.64	125,443	29.28
BM315o5	3,957	68,412	17.29	54,841	13.86	123,253	31.15
CL315o4	5,988	89,845	15.00	116,186	19.40	206,031	34.40
CM216m4	3,720	72,868	19.59	56,709	15.24	129,577	34.83
BL315o2	8,351	124,515	14.91	178,276	21.35	302,791	36.26
BL216m3	7,326	135,822	18.54	138,562	18.91	274,384	37.45
AL216m4	7,392	108,441	14.67	176,964	23.94	285,405	38.61
BL416m1	9,756	131,630	13.49	247,159	25.33	378,789	38.82
AL176e1	13,118	197,751	15.08	312,518	23.82	510,269	38.90
AL115k3	7,684	150,174	19.69	148,608	19.34	298,782	39.03
BL115k1	12,624	176,560	14.10	324,567	25.71	501,127	39.85
CL215m1	11,808	171,403	15.69	285,178	24.15	456,581	40.17
AL115m3	7,636	165,430	21.66	146,991	19.25	312,421	40.91
CM215o1	3,421	57,223	16.73	83,029	24.27	140,252	41.00
CM315o2	3,307	58,417	17.67	78,816	23.83	137,233	41.50
CM315o4	3,905	64,315	16.47	100,046	25.62	164,361	42.09
CS216e1	2,154	45,710	21.22	45,245	21.01	90,955	42.23
CM115o4	3,096	63,926	20.65	69,042	22.30	132,968	42.95
AM416m2	3,085	54,276	17.59	80,974	26.25	135,250	43.84
CS316o1	3,120	73,823	23.66	64,615	20.71	138,438	44.37
BL316g1	7,065	130,227	18.43	184,635	26.13	314,862	44.56
BM216m3	3,264	65,052	19.93	80,817	24.76	145,869	44.69
BL115k4	11,520	186,854	16.22	330,854	28.72	517,708	44.94
AL115k5	7,677	138,891	18.09	214,680	27.96	353,571	46.05
CL316o1	11,812	234,753	20.35	303,096	25.66	537,849	46.07
BL213o1	12,334	154,845	14.89	368,850	29.91	523,695	46.08
BM215m3	4,356	64,178	14.73	136,826	31.41	201,004	46.14
CL316o2	6,210	113,528	18.28	173,259	27.90	286,787	46.18
BM216m2	4,816	82,302	17.09	140,808	29.24	223,110	46.33
BM316m2	3,546	81,203	22.90	89,359	25.20	170,562	48.10
BM115o7	5,180	123,060	23.76	130,563	25.21	253,623	48.97
BL115e1	9,568	164,987	18.27	293,477	30.67	458,464	49.30
AM314m1	3,648	78,740	21.58	104,737	28.71	183,477	50.29
BM115l1	5,611	113,172	21.30	162,472	28.96	275,644	50.47
AM316m1	4,536	103,275	22.77	126,708	27.93	229,983	50.70
CM216m1	3,572	84,631	23.69	96,594	27.04	181,225	50.73
AM216o2	4,287	116,332	27.14	101,571	23.69	217,903	50.83
AM315o3	4,167	71,479	17.15	142,075	34.10	213,554	51.25
CS313o1	2,384	76,832	35.79	40,099	16.82	116,931	51.61
AM416m3	3,420	77,298	22.60	100,093	29.27	177,391	51.87
CL215o2	9,806	153,154	16.94	336,652	34.33	489,806	51.98
BL216m2	6,167	110,513	20.68	188,717	30.60	299,230	51.99
BL115m4 (Footnote 1)	16,812	445,686	26.51	431,564	25.67	877,250	52.18
AM116o1	3,868	84,694	21.90	117,167	30.29	201,861	52.19
AM115a1	3,566	88,567	25.19	96,548	27.07	185,115	52.28
CL315m1	5,796	115,357	19.90	188,085	32.45	303,442	52.35
CS111m1	2,400	55,907	23.30	70,395	29.33	126,302	52.63
BS315g1	2,760	71,995	26.09	73,849	26.76	145,844	52.85
BM115e1	4,560	119,284	26.16	122,522	26.87	241,806	53.03
CL216e3	5,952	112,872	18.96	203,029	34.11	315,901	53.07
CM115o6	5,204	122,007	23.44	155,127	29.81	277,134	53.25
BL115m1	8,986	179,271	19.95	299,324	33.31	478,595	53.26
BL115k2	6,450	116,130	18.00	230,695	35.77	346,825	53.77
AL415g1	5,992	146,800	24.50	177,524	29.63	324,324	54.13
CM213m1	3,960	98,767	24.94	116,030	29.30	214,797	54.24
CL115m2	4,973	106,239	21.36	164,028	32.98	270,267	54.34
BM115o8	4,284	120,477	28.12	113,340	26.46	233,817	54.58
CM215m2	3,312	64,022	20.75	111,169	33.57	175,191	54.76
CM115o2	4,800	116,525	24.28	146,693	30.56	263,218	54.84
BL316m1	5,628	116,780	20.75	194,641	34.58	311,421	55.33
CL216e2	6,700	145,726	22.08	223,120	33.30	368,846	55.47
DM115g1	3,204	85,133	26.57	93,906	29.31	179,039	55.88

1. One or more bases of allocation were modified for this institution

TABLE 3, Continued

CODE NUMBER	STUDENT WEEKS	EDUCATIONAL-FUNCTIONS COST		NONEDUCATIONAL-FUNCTIONS COST		COST OF BOTH FUNCTIONS	
		FOR ALL STUDENTS	PER STUDENT-WEEK	FOR ALL STUDENTS	PER STUDENT-WEEK	FOR ALL STUDENTS	PER STUDENT-WEEK
AL216m1	13,556	$155,338	$11.46	$ 602,632	$44.46	$ 757,970	$55.92
AM116g1	4,816	114,598	23.80	155,329	32.25	269,927	56.05
AL315g1	11,040	299,846	28.26	309,010	27.99	608,856	56.24
DM416m4	4,480	122,168	27.27	131,152	29.28	253,320	56.55
CS215o1	2,599	75,927	29.21	71,382	27.47	147,309	56.68
CL215o3	7,878	164,876	20.93	287,026	36.43	451,902	57.36
BL315o3	7,590	201,666	26.57	233,924	30.82	435,590	57.39
DM216e1	3,249	90,769	27.94	95,841	29.50	186,610	57.44
AL413l1	7,620	162,839	21.87	272,491	35.76	435,330	57.79
CL316m4	5,441	112,612	20.70	204,632	37.61	317,244	58.31
BM115k1	4,056	126,213	31.12	110,768	27.31	236,981	58.43
AL115k6	10,785	313,884	29.10	319,826	29.66	633,710	58.76
BL316m2	4,968	122,006	24.56	171,708	34.56	293,714	59.12
CL115m5	7,236	171,271	23.67	257,964	35.65	429,235	59.32
AM216e4	5,616	94,068	16.75	239,691	42.68	333,759	59.43
CM316o1	4,737	89,568	18.91	192,586	40.66	282,154	59.57
CM216e2	4,352	132,484	30.44	127,138	29.21	259,622	59.65
CM213o1	3,042	76,726	25.49	103,961	34.18	180,687	59.71
DM216o1	4,222	110,010	26.06	142,892	33.84	252,902	59.90
CL114k1	6,104	143,316	23.48	225,160	36.89	368,476	60.37
CM115o1	4,066	109,963	27.04	137,462	33.81	247,425	60.85
BS315m1	2,380	57,252	24.06	87,598	$36.81	144,850	60.87
BL315o1	5,104	105,332	20.64	206,552	40.47	311,884	61.11
CS115o3	2,496	75,047	30.07	78,452	31.43	153,499	61.50
AL114o1 (Footnote 1)	11,028	212,298	20.50	447,075	40.54	659,373	61.67
AM214m1	3,648	89,011	24.40	137,165	37.60	226,176	62.00
AM115o5	3,484	92,472	26.54	123,864	35.55	216,336	62.09
AL312o1	12,048	277,465	23.03	473,607	39.31	751,072	62.34
CS314o1	1,452	53,224	37.43	37,265	25.67	90,489	62.97
BM155m1	3,774	121,862	32.29	115,862	30.70	237,724	62.99
CL115o2	9,395	250,767	26.69	349,129	37.16	599,896	63.85
AM414p1	3,687	96,467	27.08	135,685	36.80	232,152	64.05
BM115k2	3,020	83,884	27.78	111,251	36.84	195,135	64.62
BM115o3	4,224	94,699	22.42	179,493	42.49	274,192	64.91
BM215m1	3,774	63,835	16.91	181,721	48.15	245,556	65.06
CL216m5	7,164	188,732	26.34	277,810	38.78	466,542	65.12
AL216e1	23,136	495,947	21.44	1,017,468	43.98	1,513,415	65.42
BM216e3	3,101	123,059	39.68	79,934	25.78	202,993	65.46
BS115o2	2,832	82,422	30.06	100,464	35.47	182,886	65.62
AM215e1	3,944	121,676	30.85	135,081	35.07	256,757	65.87
CS316m1	2,368	67,757	28.61	90,103	38.05	157,860	66.66
BL115o1	5,012	151,371	30.25	186,346	37.18	337,717	67.44
BL416e1	5,209	173,862	35.08	182,497	35.04	356,359	70.11
CS115l1	3,193	96,063	34.31	115,537	36.18	211,600	70.62
AM115p1	4,256	101,250	23.79	204,714	48.10	305,964	71.89
BS416m1	2,189	79,422	36.28	80,150	36.62	159,572	72.90
CS315o1	1,398	38,345	27.43	63,899	45.71	102,244	73.14
CS115o1	2,496	76,369	30.60	108,559	43.49	184,928	74.09
CM114o1	4,800	115,233	24.01	244,674	50.97	359,907	74.98
AM216m5	2,910	89,800	31.56	127,024	43.65	216,824	75.35
BL114p1	5,412	181,799	33.59	247,115	45.66	428,914	79.25
AS114o2	2,503	95,451	39.04	100,947	40.33	196,398	79.38
BL413p1	11,205	411,672	36.74	500,079	44.63	911,751	81.37
CS313e1	2,880	115,958	40.26	118,586	41.18	234,544	81.44
BL316m3	5,750	167,633	29.78	307,087	53.41	474,720	83.44
AM111l1	3,724	141,879	38.10	171,341	46.01	313,220	84.11
CS216m1	956	42,903	44.88	37,667	39.40	80,570	84.28
CS114o1	3,027	89,649	29.62	167,041	55.18	256,690	84.80
AL215o1	6,496	148,383	22.84	414,215	63.77	562,598	86.61
BS214o1	2,186	93,060	44.19	97,129	44.43	190,189	88.62
CS115g1	2,088	82,496	39.51	111,959	53.62	194,455	93.13
CS314o2	1,016	44,097	43.40	52,798	51.97	96,895	95.37
BS125m1	1,098	70,173	63.91	37,442	34.10	107,615	98.01

1. One or more bases of allocation were modified for this institution.

GROSS COST OF THE TOTAL DIPLOMA PROGRAM

COMPARISON OF TOTAL PROGRAM COSTS WITH COSTS TO PARENT INSTITUTIONS

The term total program cost as used in this report indicates the sum of the cost to the parent agency plus the cost to any and all cooperating agencies offering parts of the program. With the exception of 10 programs, the parent institution provided only a portion of the educational experiences of the program. The remaining experiences were provided by cooperating agencies.

In terms of statistical analysis of the data, the difference between the cost per student-week to the parent institution and the cost per student-week for the total program is a negligible difference. The rank of a particular program based upon cost to the parent institution varied insignificantly from its rank based upon total program costs. The correlation (Spearman rank) between the two costs was .980. The relatively high correlation between these costs indicated in advance that no new findings would result from repeating the statistical tests on ranks of programs with regard to total program costs.

The high correlation does not necessarily signify a similarity between the cost per student-week in the parent institution and the cost in the cooperating agencies. The cost per student-week in a cooperating agency could vary greatly from the cost in the parent institution without affecting the relative standing of the program when ranked as to total program costs.

For example, in one program, the cost per student-week to the parent institution was $74.98. The cost per student-week to the cooperating agency was $37.08--less than half the cost to the parent institution. The cost per student-week for the total program, however, was $72.17, which is slightly more than 96 percent of the cost to the parent institution. The rank of this program based on parent institution cost was identical with its rank based on total program cost. The small effect of this cooperating agency's cost upon the total program cost was obviously a function of the relatively small number of student-weeks spent in the cooperating agency. Of the total number of student-weeks (5,184) accumulated in the program during the year, 7.4 percent (384 weeks) were spent in the cooperating agency.

The 118 programs for which total program costs were computed accumulated 710,953 student-weeks. Of these, 642,340, somewhat over 90 percent, occurred in the parent institution.

The similarity of the cost to the parent institution and the cost of the total program is apparent in Figure 12. Statistically, the two distributions do not differ significantly.

Table 5 at the end of this section lists each program in order of increasing gross total program cost per student-week. The cost to each institution offering a portion of the program is identified. Findings reported in the previous section with regard to relationships of independent variables to the cost to the parent institution are applicable to the cost of the total program as well. A more detailed report of tests for these relationships would be redundant.

RELATIONSHIP OF VARIABLES TO COST OF NURSING EDUCATION IN COOPERATING AGENCIES

The statistical analyses referred to in this section deal with the costs to the cooperating agencies. While no cooperating agency included in the study provided more than a minor portion of an individual program, this does not imply that the cost borne by a given cooperating agency for an educational course for diploma students was necessarily less than that borne by any parent institution. The typical course given by the agencies was 12 weeks in length, which is roughly 28 percent of the number of weeks per year that a typical student spent in the parent institution. Therefore, a cooperating agency that offered one course to 200 students per year accumulated as many student-weeks as did a parent institution with 56 students enrolled in the program. Each of the 30 cooperating agencies servicing more than 300 students per year accumulated student-weeks equivalent to those accumulated by a parent institution with 85 or more students enrolled in the program.

Table 4 at the end of this section lists, by type of nursing course, the costs to cooperating agencies for the education (instruction and applicable maintenance) of diploma students. Figure 13 is a graphic representation of the median gross costs per student-week of educational and noneducational functions by type of course.

The investigation of possible relationships between independent variables and the costs of nursing courses in cooperating agencies closely paralleled the investigation of relationships between independent variables and costs in parent institutions.

FIGURE 12. GROSS COST OF EDUCATIONAL AND NONEDUCATIONAL FUNCTIONS PER STUDENT-WEEK TO PARENT INSTITUTIONS AND TO PARENT INSTITUTIONS AND COOPERATING AGENCIES
(118 Programs)

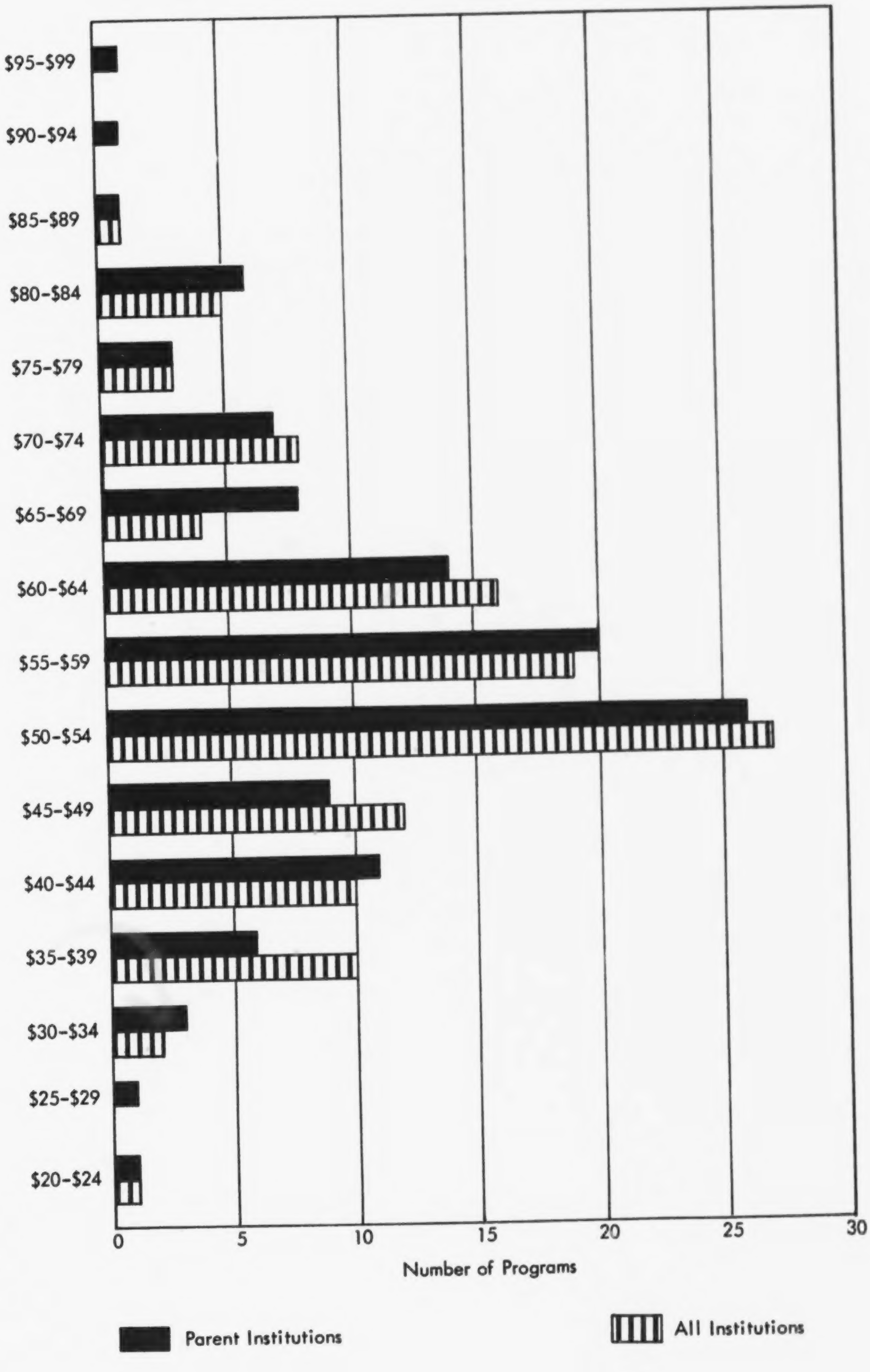
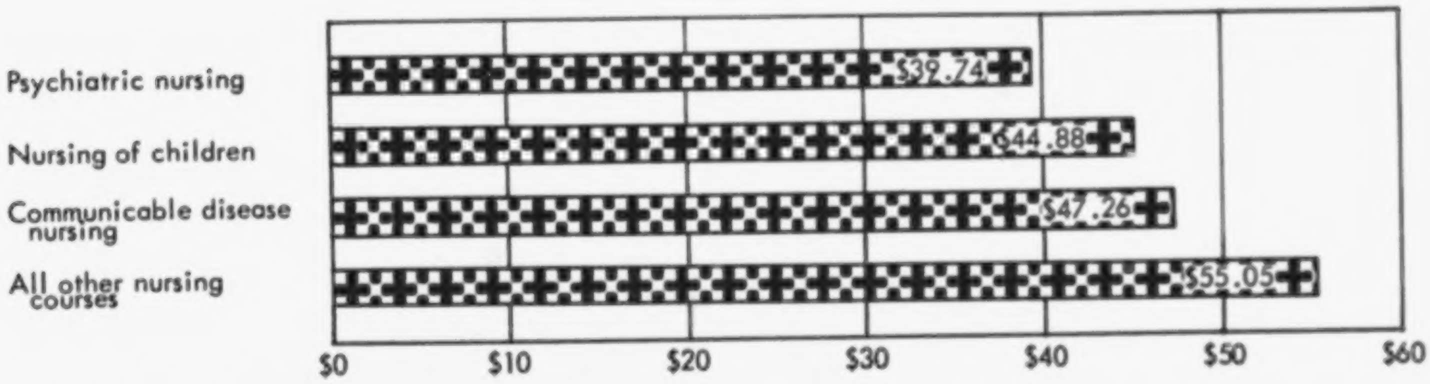


FIGURE 13. MEDIAN GROSS COST OF EDUCATIONAL AND NONEDUCATIONAL FUNCTIONS PER STUDENT-WEEK TO COOPERATING AGENCIES, BY TYPE OF COURSE



In addition to geographic region, type of control, and enrollment size, another variable that occurred in cooperating agencies was investigated. The additional variable was the clinical area in which the cooperating agency provided educational experiences for diploma program students.

The unit of cost used in investigating all variables was the cost per student per week. This unit was used in making comparisons between the cost of instruction in communicable disease nursing and that in psychiatric nursing, even though the typical course in psychiatric nursing covered a 12-week interval and the typical course in communicable disease nursing covered a 4-week interval.

The subgroups by type of control used for cooperating agencies differed somewhat from those used for parent institutions. For the former, there was no differentiation among institutions under public control, so that the subgroups were: agencies under public (governmental) control, agencies under the control of a private secular organization, and agencies under the control of a private religious organization.

The data pertaining to the variable enrollment size for cooperating agencies are not comparable with those data for parent institutions. Enrollment size in cooperating agencies is limited to the number of students enrolled in the particular course during the fiscal year of the cost analysis. Diploma students taking other courses in the same institution were not included in the number enrolled. The three enrollment-size subgroups were (1) 99 or fewer students enrolled, (2) from 100 to 300 students enrolled, and (3) 300 or more students enrolled. Each of the three enrollment-size subgroups accounted for more than one-fourth but less than one-half of the total number of cooperating agencies.

Relationship of Variables to the Cost of Educational Functions in Cooperating Agencies

The gross costs of educational functions in the 119 cooperating agencies did not differ significantly when comparisons among all four geographic subgroups were made at the same time. Ranking data were as follows:

Subgroup by NLN Region	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational Functions	
		Average Rank	Average Rank Minus 60.00*
Region I	40	59.03	-0.97
Region II	45	56.49	-3.51
Region III	21	56.76	-3.24
Region IV	13	80.38	20.38

*The average rank of all (119) cases.

The result of the Kruskal-Wallis one-way analysis of variance applied to these subgroup ranks was a chi-square of 5.23 at 3 degrees of freedom ($p > .10$).

Considered separately, Region IV (the West) differed significantly from all the other subgroups combined in having relatively high gross costs per student-week (standard score ($\underline{z}$) = 2.26; $p < .03$).

There was a significant relationship between the type of control of the cooperating agency and the gross cost of educational functions. Ranking data for the three type-of-control subgroups were as follows:

Subgroup by Type of Control	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational Functions	
		Average Rank	Average Rank Minus 60.00*
Public (governmental)	79	67.04	7.04
Private secular	29	50.59	-9.41
Private religious	11	34.27	-25.73

*The average rank of all (119) cases.

The result of the Kruskal-Wallis one-way analysis of variance of these data was a chi-square of 11.57 at 2 degrees of freedom ($p < .01$).

In addition, significant differences were apparent when the private-religious subgroup was compared with all other subgroups combined and when the subgroup public (governmental) was similarly compared.

Subgroup by Type of Control	Standard Score (z)	Probability
Public (governmental)	3.13	< .002
Private secular	1.69	> .09
Private religious	2.60	< .01

Significant relationships were apparent when the ranks of the cooperating agencies were sorted into the three enrollment-size subgroups. Ranking data for these subgroups were as follows:

Subgroup by Enrollment Size	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational Functions	
		Average Rank	Average Rank Minus 60.00*
99 or fewer	35	78.49	18.49
100 to 300	54	60.13	0.13
300 or more	30	38.20	-21.80

*The average rank of all (119) cases.

The chi-square resulting from the Kruskal-Wallis one-way analysis of variance was 22.03 at 2 degrees of freedom, which is significant at the .001 level of probability.

Considered separately, the 99-or-fewer subgroup differed significantly from all other subgroups combined, as did the 300-or-more subgroup. The results of tests for these differences were as follows:

Subgroup by Enrollment Size	Standard Score (z)	Probability
99 or fewer	3.13	< .002
300 or more	4.00	< .0001

Differences of comparable significance did not appear when the agencies' ranks were sorted into subgroups by type of course.

The Kruskal-Wallis one-way analysis of variance applied to these ranks failed to show significant differences among the four subgroups (chi-square = 7.27 at 3 degrees of freedom; $p > .05$). Data pertaining to the analysis were as follows:

Subgroup by Course	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational Functions	
		Average Rank	Average Rank Minus 60.00*
Psychiatric nursing	68	61.72	1.72
Nursing of children	24	46.87	-13.13
Communicable disease nursing	13	77.92	17.92
All other courses	14	57.50	-2.50

*The average rank of all (119) cases.

The subgroup nursing of children differed significantly from all other subgroups combined, as did the subgroup communicable disease nursing. The results of tests for these differences were as follows:

Subgroup by Course	Standard Score (z)	Probability
Nursing of children	2.09	< .04
Communicable disease nursing	1.99	< .05

Relationship of Variables to the Cost of Noneducational Functions in Cooperating Agencies

In 2 of the 119 cooperating agencies, no provisions existed for supplying diploma program students with lodging and food and other services classed as noneducational functions. Data pertaining to noneducational-functions cost are therefore limited to the remaining 117 cooperating agencies. Ranking data for the 117 agencies by regional subgroups were as follows:

Subgroup by NLN Region	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Noneducational Functions	
		Average Rank	Average Rank Minus 59.00*
Region I	39	63.90	4.90
Region II	44	52.34	-6.66
Region III	21	57.43	-1.57
Region IV	13	69.38	10.38

*The average rank of all (117) cases.

There were no statistically significant differences among the regional subgroups (chi-square = 3.74 at 3 degrees of freedom). None of the additional tests applied to these data revealed a significant relationship between the variable geographic region and the cost of noneducational functions.

Ranking data for the subgroups by type of control were as follows:

Subgroup by Type of Control	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Noneducational Functions	
		Average Rank	Average Rank Minus 59.00*
Public (governmental)	77	56.19	-2.81
Private secular	29	71.20	12.20
Private religious	11	46.45	-12.55

*The average rank of all (117) cases.

While there were no significant differences among the three subgroups, the subgroup private secular differed significantly from all other subgroups combined. A Mann-Whitney U test for such a difference resulted in a standard score (z) of 2.24, which is significant at the .05 level of probability.

The following data pertain to the ranks for noneducational functions cost when sorted by enrollment-size subgroups.

Subgroup by Enrollment Size	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Noneducational Functions	
		Average Rank	Average Rank Minus 59.00*
99 or fewer	34	56.59	-2.41
100 to 300	53	58.26	-0.74
300 or more	30	63.03	4.03

*The average rank of all (117) cases.

Tests applied to these data revealed no relationships between the variable enrollment size and the cost of noneducational functions that were significant at the .05 level of probability.

Data pertaining to ranks of noneducational-functions cost by type-of-course subgroups included the following:

Subgroup by Course	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Noneducational Functions	
		Average Rank	Average Rank Minus 59.00*
Psychiatric nursing	67	48.51	-10.49
Nursing of children	24	67.73	8.73
Communicable disease nursing	12	74.75	15.75
All other courses	14	80.71	21.71

*The average rank of all (117) cases.

The Kruskal-Wallis one-way analysis of variance applied to these data resulted in a chi-square of 16.32 at 3 degrees of freedom. There was a statistically significant difference among the four subgroups ($p < .001$).

Three of the subgroups differed significantly from all other subgroups combined, as is shown in the following table.

Subgroup by Course	Standard Score (z)	Probability
Psychiatric nursing	3.87	$< .0002$
Communicable disease nursing	2.05	$< .05$
All other courses	3.12	$< .002$

It cost significantly less to provide lodging and food and other services covered under noneducational functions for students taking courses in psychiatric nursing than it did for students taking all other courses. It cost significantly more to provide these functions to students taking courses in the subgroup communicable disease nursing than it did in all other subgroups combined. This was true as well of the subgroup all other courses. In all of the diploma programs included in this study, less than 12 percent of the courses given by cooperating agencies were in clinical areas other than psychiatry and pediatrics.

There were fewer significant relationships between the variables considered and noneducational-functions cost than there were between the variables and educational-functions cost. With regard to noneducational-functions cost, evidences of significant relationships were limited to the variables type of control and clinical area of the nursing course.

Relationship of Variables to the Costs of Educational and Noneducational Functions

Cooperating agencies resembled parent institutions in the lack of correlation between each institution's rank as to educational-functions cost and its rank as to noneducational-functions cost. Testing the data from 117 agencies (those from which information about both types of costs was gathered) for correlation between the two costs resulted in a Spearman rank correlation coefficient (r_s) of .148, which could not be shown to be significantly different from zero correlation. As with the analysis of data from parent institutions, the lack of evidence of correlation justified considering the possible relationship of each variable to the costs of educational and noneducational functions.

The following data show the variance among the four NLN regions when ranked as to the cost of educational and noneducational functions.

Subgroup by NLN Region	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational and Noneducational Functions	
		Average Rank	Average Rank Minus 59.00*
Region I	39	62.79	3.79
Region II	44	50.11	-8.89
Region III	21	57.24	-1.76
Region IV	13	80.54	21.54

*The average rank of all (117) cases.

The result of the Kruskal-Wallis one-way analysis of variance based on these data was a chi-square of 8.81 at 3 degrees of freedom. There was significant evidence (at the .05 level of probability) of differences among the four geographic region subgroups.

In two instances, a subgroup considered separately differed significantly from all other subgroups combined. Costs in Region II (the Midwest) were significantly lower, and costs in Region IV (the West) were significantly higher, as shown in the table below.

Subgroup by NLN Region	Standard Score ($\underline{z}$)	Probability
Region II	2.20	$<.03$
Region IV	2.43	$<.02$

The data pertaining to the three type-of-control subgroups ranked as to the sum of the costs of educational and noneducational functions were as follows:

Subgroup by Type of Control	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational and Noneducational Functions	
		Average Rank	Average Rank Minus 59.00*
Public (governmental)	77	60.55	1.55
Private secular	29	64.00	5.00
Private religious	11	35.00	-24.00

*The average rank of all (117) cases.

The result of the Kruskal-Wallis one-way analysis of variance applied to these data was a chi-square of 6.30 at 2 degrees of freedom, which is significant at the .05 level of probability. When the results were sorted into two subgroups, public (governmental) versus private (secular as well as religious), a significant difference could not be demonstrated (standard score ($\underline{z}$) = 0.68; $p > .50$). Compared with all other subgroups combined, the private-religious subgroup was significantly less expensive (standard score ($\underline{z}$) = 2.47: $p < .02$).

Data pertaining to the three enrollment-size subgroups ranked as to the sum of the two costs were as follows:

Subgroup by Enrollment Size	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational and Noneducational Functions	
		Average Rank	Average Rank Minus 59.00*
99 or fewer	34	70.12	11.12
100 to 300	53	57.32	-1.68
300 or more	30	49.37	-9.63

*The average rank of all (117) cases.

The Kruskal-Wallis one-way analysis of variance applied to these data resulted in a chi-square of 6.20 at 2 degrees of freedom, which was significant at the .05 level of probability.

One subgroup, 99 or fewer, differed significantly from the remaining subgroups combined. For that subgroup, the cost of educational and noneducational functions were significantly higher (standard score (z) = 2.20; $p < .03$).

Significant differences were apparent among the four subgroups by type of course. Data for such comparisons were as follows:

Subgroup by Course	Number of Cases in Subgroup	Rank of Subgroup as to Cost of Educational and Noneducational Functions	
		Average Rank	Average Rank Minus 59.00*
Psychiatric nursing	67	52.48	-6.52
Nursing of children	24	58.96	-0.04
Communicable disease nursing	12	78.00	19.00
All other courses	14	74.00	15.00

*The average rank of all (117) cases.

The Kruskal-Wallis one-way analysis of variance applied to these data resulted in a chi-square of 8.98 at 3 degrees of freedom, which was significant at the .05 level of probability.

The subgroup psychiatric nursing ranked significantly lower than all other subgroups combined. The subgroup communicable disease nursing ranked significantly higher than all other subgroups combined. These differences were as follows:

Subgroup by Type of Course	Standard Score (z)	Probability
Psychiatric nursing	2.41	$<.02$
Communicable disease nursing	2.05	$<.05$

Statistically Significant Relationships between Variables and Cost to Cooperating Agencies

Limiting the findings to those that were significant at a probability of .05 or less, the following statements can be made about the gross cost of nursing education to the cooperating agencies.

With respect to educational functions:

1. The cost tended to be highest in NLN Region IV.
2. The cost tended to be highest in agencies under government control and lowest in agencies controlled by religious groups.
3. The cost tended to be highest in agencies in which 99 or fewer diploma students were enrolled in the course and lowest in agencies in which 300 or more were enrolled in the course.

4. The cost tended to be highest in agencies that offered courses in communicable disease nursing and lowest in those that offered courses in nursing of children.

With respect to noneducational functions:

1. The cost tended to be highest in agencies under the control of private secular organizations.
2. The cost tended to be highest in agencies that offered courses in communicable disease nursing and in agencies that offered courses in the subgroup all other courses and lowest in agencies that offered courses in psychiatric nursing.

With respect to educational and noneducational functions:

1. The cost tended to be highest in NLN Region IV and lowest in NLN Region II.
2. The cost tended to be lowest in agencies under private religious control.
3. The cost tended to be highest in agencies in which 99 or fewer diploma students were enrolled for the course.
4. The cost tended to be highest in agencies offering courses in communicable disease nursing and lowest in agencies offering courses in psychiatric nursing.

These findings are summarized in the following table.

Type of Cost	Significant* Differences in Cost							
	By Region		By Type of Control		By Enrollment Size		By Type of Course	
	Among All Subgroups	In Subgroups Considered Separately	Among All Subgroups	In Subgroups Considered Separately	Among All Subgroups	In Subgroups Considered Separately	Among All Subgroups	In Subgroups Considered Separately
Educational-functions cost	No	Higher for Region IV	Yes	Higher for public (governmental) Lower for private religious	Yes	Higher for 99 or fewer enrollments Lower for 300 or more enrollments	No	Higher for communicable disease nursing Lower for nursing of children
Noneducational-functions cost	No	No	No	Higher for private secular	No	No	Yes	Higher for communicable disease nursing and for subgroup all other courses Lower for psychiatric nursing
Educational and noneducational-functions cost	Yes	Higher for Region IV Lower for Region II	Yes	Lower for private religious	Yes	Higher for 99 or fewer enrollments	Yes	Higher for communicable disease nursing Lower for psychiatric nursing

*At the .05 level of probability.

SUPPLEMENTARY TABLES

Table 4, the first of the two tables at the end of this section, is a compilation of the cost data, net and gross, that pertain to nursing courses given by cooperating agencies. Under each clinical area, the data are arranged in order of increasing gross cost of educational and noneducational functions per student-week. The section of the table headed "Cost of Typical Course" pertains to the number of student-weeks needed to complete the course. Table 5 is a compilation of cost data pertaining to total program costs--the cost to all agencies for all educational and noneducational functions provided in the program. The data are arranged in order of increasing gross total program cost per student-week.

The code numbers used for cooperating agencies in Table 4 differ somewhat from those used for parent institutions in the table at the end of the preceding section. The differences are as follows:

1. The second symbol of each code number refers to the number of students who took the course during the fiscal year of the study. The symbols are the capital letters A through F. Their meanings are:

   A = less than 50 students.
   B = 50 to 100 students.
   C = 100 to 200 students.
   D = 200 to 300 students.
   E = 300 to 400 students.
   F = 400 or more students.

2. The third symbol refers to the NLN region. The symbols are the arabic numerals 5 through 8. Their meanings are:

   5 = NLN Region I.
   6 = NLN Region II.
   7 = NLN Region III.
   8 = NLN Region IV.

3. The sixth symbol refers to charges for tuition or fees per student taking the course. The symbols are the lower-case letters x, y, and z. Their meanings are:

   x = There were no charges or fees for the course.
   y = There were charges and/or fees of less than $25.
   z = There were charges and/or fees of more than $25 for the course.

To illustrate, the symbols in the code number CE522x2 signify that:

(C). The fiscal year of the cost analysis ended in 1961.
(E). Between 300 and 400 students took the course during the year.
(5). The cooperating agency was located in NLN Region I.
(2). The cooperating agency was a psychiatric hospital.
(2). The agency was controlled by a state government.
(x). There were no charges or fees for the course.
(2). This case was the second chosen at random among cases with the foregoing characteristics.

TABLE 4. GROSS AND NET COSTS OF DIPLOMA PROGRAM COURSES GIVEN BY COOPERATING AGENCIES

CODE NUMBER	COST PER STUDENT-WEEK						COST OF TYPICAL COURSE					
	GROSS			NET			GROSS			NET		
	EDUCATIONAL	NON-EDUCATIONAL	TOTAL	EDUCATIONAL	NON-EDUCATIONAL	TOTAL	EDUCATIONAL	NON-EDUCATIONAL	TOTAL	EDUCATIONAL	NON-EDUCATIONAL	TOTAL
					PSYCHIATRIC NURSING							
AE722x1	$ 4.83	$ 7.91	$ 12.74	$ 4.83	$ 7.91	$ 12.74	$ 57.96	$ 94.92	$ 152.88	$ 57.96	$ 94.92	$ 152.88
AF726y1	3.55	12.60	16.15	2.77	11.60	14.37	42.60	151.20	193.80	33.24	139.20	172.44
BE622x1	7.18	10.43	17.61	7.18	10.43	17.61	93.34	135.59	228.93	93.34	135.59	228.93
AD522x2	6.90	12.71	19.61	6.90	12.71	19.61	82.80	152.52	235.32	82.80	152.52	235.32
BE722y1	7.79	13.46	21.25	7.40	13.46	20.86	101.27	174.98	276.25	96.20	174.98	271.18
BD622y1	10.74	10.59	21.33	10.40	10.59	20.99	128.88	127.08	255.96	124.80	127.08	251.88
CC623y1	22.66	*	22.66	22.46	*	22.46	271.92	*	271.92	269.52	*	269.52
AC622x2	10.37	13.58	23.95	10.37	13.58	23.95	134.81	176.54	311.35	134.81	176.54	311.35
AB522x1	10.16	14.63	24.79	10.16	14.63	24.79	132.08	190.19	322.27	132.08	190.19	322.27
CD522x1	11.59	16.12	27.71	11.59	16.12	27.71	139.08	193.44	332.52	139.08	193.44	332.52
AD522x1	6.72	21.48	28.20	6.72	21.48	28.20	80.64	257.76	338.40	80.64	257.76	338.40
AD622x1	18.10	10.53	28.63	18.10	10.53	28.63	235.30	136.89	372.19	235.30	136.89	372.19
CC522x3	12.61	16.95	29.56	12.61	16.95	29.56	151.32	203.40	354.72	151.32	203.40	354.72
AE722y1	13.68	16.48	30.16	12.82	16.48	29.30	164.16	197.76	361.92	153.84	197.76	351.60
CC622y1	20.91	10.42	31.33	20.45	10.42	30.87	250.92	125.04	375.96	245.40	125.04	370.44
AA611x1	26.52	4.95	31.47	26.52	4.95	31.47	318.24	59.40	377.64	318.24	59.40	377.64
BC626y1	9.75	21.86	31.61	8.98	21.86	30.84	126.75	284.18	410.93	116.74	284.18	400.92
BC522x2	15.21	16.52	31.73	15.21	16.52	31.73	197.73	214.76	412.49	197.73	214.76	412.49
AD622x2	10.72	21.25	31.97	10.72	21.25	31.97	128.64	255.00	383.64	128.64	255.00	383.64
AA622x2	28.01	4.12	32.13	28.01	4.12	32.13	364.13	53.56	417.69	364.13	53.56	417.69
BF626z1	12.56	19.85	32.41	8.79	19.10	27.89	150.72	238.20	388.92	105.48	229.20	334.68
AF726z1	7.70	24.90	32.60	7.05	22.78	29.83	92.40	298.80	391.20	84.60	273.36	357.96
CD622x1	11.71	24.29	36.00	11.71	24.29	36.00	140.52	291.48	432.00	140.52	291.48	432.00
CC522x1	8.70	27.97	36.67	8.70	27.97	36.67	104.40	335.64	440.04	104.40	335.64	440.04
BD522x1	23.97	13.11	37.08	23.97	13.11	37.08	287.64	157.32	444.96	287.64	157.32	444.96
BL115k4	8.62	28.72	37.34	7.87	28.72	36.59	112.06	373.36	485.42	102.31	373.36	475.67
BF613x1	4.95	32.69	37.64	3.53	23.82	27.35	59.40	392.28	451.68	42.36	285.84	328.20
AC622x1	19.46	18.39	37.85	19.46	18.39	37.85	252.98	239.07	492.05	252.98	239.07	492.05
CC626y1	22.79	15.24	38.03	22.71	15.24	37.95	273.48	182.88	456.36	272.52	182.88	455.40
CB722x1	22.37	15.79	38.16	22.37	15.79	38.16	268.44	189.48	457.92	268.44	189.48	457.92
AD526y1	6.88	31.49	38.37	6.46	31.49	37.95	82.56	377.88	460.44	77.52	377.88	455.40
BC622x1	18.74	20.17	38.91	18.74	20.17	38.91	224.88	242.04	466.92	224.88	242.04	466.92
AD522x3	25.32	13.71	39.03	25.32	13.71	39.03	303.84	164.52	468.36	303.84	164.52	468.36
AE625y1	14.02	25.68	39.70	13.94	25.68	39.62	182.26	333.84	516.10	181.22	333.84	515.06
AD822y1	16.54	23.24	39.78	16.32	23.24	39.56	198.48	278.88	477.36	195.84	278.88	474.72
BB522x2	14.12	26.25	40.37	14.12	26.25	40.37	169.44	315.00	484.44	169.44	315.00	484.44
CC622x1	16.82	24.93	41.75	16.82	24.93	41.75	201.84	299.16	501.00	201.84	299.16	501.00
CD522x2	13.99	27.89	41.88	13.99	27.89	41.88	181.87	362.57	544.44	181.87	362.57	544.44
AB522x2	22.32	19.89	42.21	22.32	19.89	42.21	267.84	238.64	506.52	267.84	238.68	506.52
AE525x1**	10.44	31.89	42.33	10.16	31.10	41.26	125.28	382.68	507.96	121.92	373.20	495.12
AL315g1	16.08	27.99	44.07	16.08	27.99	44.07	209.04	363.87	572.91	209.04	363.87	572.91
CC622x3	20.24	26.01	46.25	20.24	26.01	46.25	242.88	312.12	555.00	242.88	312.12	555.00
BB522y1	13.87	32.53	46.40	13.79	32.53	46.32	166.44	390.36	556.80	165.48	390.36	555.84
AC622x3**	22.00	25.01	47.01	13.53	15.75	29.28	264.00	300.12	564.12	162.36	189.00	351.36
CC622x2	27.26	21.51	48.77	27.26	21.51	48.77	327.12	258.12	585.24	327.12	258.12	585.24
BB522x1	43.16	5.69	48.85	43.16	5.69	48.85	561.08	73.97	635.05	561.08	73.97	635.05
AB822x2	36.72	12.15	48.87	36.72	12.15	48.87	440.64	145.80	586.44	440.64	145.80	586.44
AE521x1	21.67	30.88	52.55	21.67	30.88	52.55	260.04	370.56	630.60	260.04	370.56	630.60
CB521x1	27.30	25.54	52.84	27.30	25.54	52.84	327.60	306.48	634.08	327.60	306.48	634.08
AB822x1	34.99	18.57	53.56	34.99	18.57	53.56	279.92	148.56	428.48	279.92	148.56	428.48
AA622x1	32.12	23.76	55.88	32.12	23.76	55.88	385.44	285.12	670.56	385.44	285.12	670.56
BB722x1	35.03	22.69	57.72	35.03	22.69	57.72	420.36	272.28	692.64	420.36	272.28	692.64
AC722x1	33.64	24.30	57.94	33.64	24.30	57.94	437.32	315.90	753.22	437.32	315.90	753.22
AC722y1	23.45	34.80	58.25	21.38	31.73	53.11	281.40	417.60	699.00	281.40	417.60	699.00
BC522x1	22.19	37.79	59.98	22.19	37.79	59.98	266.28	453.48	719.76	266.28	453.48	719.76
AE522x1	9.96	51.51	61.47	9.96	51.51	61.47	119.52	618.12	737.64	119.52	618.12	737.64
CC621x1	24.85	37.00	61.85	24.85	37.00	61.85	298.20	444.00	742.20	298.20	444.00	742.20
AC821x1	21.70	41.35	63.05	21.70	41.35	63.05	260.40	496.20	756.60	260.40	496.20	756.60
CC522x2	24.42	39.03	63.45	24.42	39.03	63.45	293.04	468.36	761.40	293.04	468.36	761.40
CA721x1	34.42	29.20	63.62	34.42	29.20	63.62	413.04	350.40	763.44	413.04	350.40	763.44
BB522x3	53.55	16.04	69.59	53.55	16.04	69.59	642.60	192.48	835.08	642.60	192.48	835.08
BC811x1	30.28	40.65	70.93	30.28	40.65	70.93	363.36	487.80	851.16	363.36	487.80	851.16
AC522x1	28.10	44.80	72.90	28.10	44.80	72.90	365.30	582.40	947.70	365.30	582.40	947.70
CB522x1	45.27	31.73	77.00	45.27	31.73	77.00	543.24	380.76	924.00	543.24	380.76	924.00
BS125m1	45.53	34.10	79.63	45.53	34.10	79.63	591.89	443.30	1,035.19	591.89	443.30	1,035.19
BB722x2	36.32	46.49	82.81	36.32	46.49	82.81	435.84	557.88	993.72	435.84	557.88	993.72
BC821x1	47.89	45.54	93.43	47.89	45.54	93.43	383.12	364.32	747.44	383.12	364.32	747.44
BD524x1	22.35	97.33	119.68	22.35	97.33	119.68	268.20	1,167.96	1,436.16	268.20	1,167.96	1,436.16

*No non-educational facilities.
**State appropriations for course.

TABLE 4, Continued

CODE NUMBER	COST PER STUDENT-WEEK						COST OF TYPICAL COURSE					
	GROSS			NET			GROSS			NET		
	EDUCATIONAL	NON-EDUCATIONAL	TOTAL	EDUCATIONAL	NON-EDUCATIONAL	TOTAL	EDUCATIONAL	NON-EDUCATIONAL	TOTAL	EDUCATIONAL	NON-EDUCATIONAL	TOTAL
NURSING OF CHILDREN												
BC656x1	$ 12.56	$ 19.21	$ 31.77	$ 12.56	$ 19.21	$ 31.77	$163.28	$249.73	$ 413.01	$163.28	$249.73	$ 413.01
AF555z1	9.87	22.30	32.17	7.61	22.30	29.91	118.44	267.60	386.04	91.32	267.60	358.92
BD655x1	9.51	27.38	36.89	9.51	27.38	36.89	123.63	355.94	479.57	123.63	355.94	479.57
BF613x1	5.20	32.69	37.89	3.71	23.82	27.53	62.40	392.28	454.68	44.52	285.84	330.36
CC755y1	12.89	25.41	38.30	12.56	25.41	37.97	167.57	330.33	497.90	163.28	330.33	493.61
CM315o4	12.97	25.62	38.59	12.97	25.62	38.59	168.61	333.06	501.67	168.61	333.06	501.67
CE555x1	9.06	31.58	40.64	9.06	31.58	40.64	108.72	378.96	487.68	108.72	378.96	487.68
BB855x1	13.25	28.10	41.35	13.25	28.10	41.35	159.00	337.20	496.20	159.00	337.20	496.20
BM155m1	12.47	30.70	43.17	11.26	30.70	41.96	149.64	368.40	518.04	135.12	368.40	503.52
AF555y1	11.27	32.68	43.95	10.71	31.05	41.76	135.24	392.16	527.40	128.52	372.60	501.12
CC755z1	11.84	32.50	44.34	11.28	30.97	42.25	142.08	390.00	532.08	135.36	371.64	507.00
CF655x1	12.38	32.22	44.60	12.38	32.22	44.60	160.94	418.86	579.80	160.94	418.86	579.80
BC655y1	12.46	32.70	45.16	7.61	32.70	40.31	161.98	425.10	587.08	98.93	425.10	524.03
AL312o1	5.87	39.31	45.18	5.14	39.31	44.45	70.44	471.72	542.16	61.68	471.72	533.40
AF656y1	6.20	39.17	45.37	6.07	38.35	44.42	80.60	509.21	589.81	78.91	498.55	577.46
AL315g1	19.34	27.99	47.33	19.34	27.99	47.33	251.42	363.87	615.29	251.42	363.87	615.29
BC655x1	20.94	27.38	48.32	20.94	27.38	48.32	272.22	355.94	628.16	272.22	355.94	628.16
AI41311	12.67	35.76	48.43	12.67	35.76	48.43	152.04	429.12	581.16	152.04	429.12	581.16
BC555x1	22.65	25.82	48.47	22.65	25.82	48.47	271.80	309.84	581.64	271.80	309.84	581.64
AD855y1	32.36	19.45	51.81	30.55	19.45	50.00	420.68	252.85	673.53	397.15	252.85	650.00
CD655x1	25.32	27.12	52.44	25.32	27.12	52.44	329.16	352.56	681.72	329.16	352.56	681.72
BA616x1	31.10	22.02	53.12	31.10	22.02	53.12	373.20	264.24	637.44	373.20	264.24	637.44
CF655x2	31.64	21.63	53.27	31.64	21.63	53.27	379.68	259.56	639.24	379.68	259.56	639.24
CD655y1	20.38	45.85	66.23	20.16	45.85	66.01	244.56	550.20	794.76	241.92	550.20	792.12
COMMUNICABLE DISEASE NURSING												
CE732x1**	16.33	17.42	33.75	2.43	11.36	13.79	65.32	69.68	135.00	9.72	45.44	55.16
BI413p1	33.97	4.18	38.15	33.97	4.18	38.15	135.88	16.72	152.60	135.88	16.72	152.60
CB532x1	38.47	*	38.47	38.47	*	38.47	153.88	*	153.88	153.88	*	153.88
BD633x1	13.59	29.48	43.07	13.59	29.48	43.07	81.54	176.88	258.42	81.54	176.88	258.42
AD633x1	9.67	34.75	44.42	9.67	34.75	44.42	58.02	208.50	266.52	58.02	208.50	266.52
BF613x1	12.82	32.69	45.51	9.15	23.82	32.97	76.92	196.14	273.06	54.90	142.92	197.82
CB534x1	20.32	26.94	47.26	20.32	26.94	47.26	121.92	161.64	283.56	121.92	161.64	283.56
AL312o1	20.08	39.31	59.39	17.59	39.31	56.90	80.32	157.24	237.56	70.36	157.24	227.60
AB532x1	32.40	32.60	65.00	32.40	32.60	65.00	129.60	130.40	260.00	129.60	130.40	260.00
BD634x1	19.95	45.39	65.34	19.95	45.39	65.34	119.70	272.34	392.04	119.70	272.34	392.04
AI41311	34.19	35.76	69.95	34.19	35.76	69.95	136.76	143.04	279.80	136.76	143.04	279.80
CB732x1	47.84	29.80	77.64	47.84	29.80	77.64	191.36	119.20	310.56	191.36	119.20	310.56
AB632x1	40.16	40.65	80.81	40.16	40.65	80.81	240.96	243.90	484.86	240.96	243.90	484.86
OBSTETRIC NURSING												
CA616x1	8.89	27.20	36.09	8.89	27.20	36.09	106.68	326.40	433.08	106.68	326.40	433.08
AI41311	16.82	35.76	52.58	16.82	35.76	52.58	201.84	429.12	630.96	201.84	429.12	630.96
AL312o1	13.59	39.31	52.90	12.22	39.31	51.33	163.08	471.72	634.80	146.64	471.72	618.36
CC545x1	8.77	48.43	57.20	8.77	48.43	57.20	105.24	581.16	686.40	105.24	581.16	686.40
BF613x1	30.97	32.69	63.66	22.12	23.82	45.94	371.64	392.28	763.92	265.44	285.84	551.28
CB545y1	25.00	51.46	76.46	24.86	51.46	76.32	325.00	668.98	993.98	323.18	668.98	992.16
OTHER NURSING												
BA615x1	9.33	22.98	32.31	9.33	22.98	32.31	55.98	137.88	193.86	55.98	137.88	193.86
BE614x1	29.07	4.85	33.92	29.07	4.85	33.92	116.28	19.40	135.68	116.28	19.40	135.68
BL115o1	2.51	37.18	39.69	2.51	37.18	39.69	65.26	966.68	1,031.94	65.26	966.68	1,031.94
CA616x1	14.66	27.20	41.86	14.66	27.20	41.86	58.64	108.80	167.44	58.64	108.80	167.44
CE514x1	20.03	40.84	60.87	20.03	40.84	60.87	80.12	163.36	243.48	80.12	163.36	243.48
AA815x1	11.79	53.07	64.86	11.79	53.07	64.86	47.16	212.28	259.44	47.16	212.28	259.44
BF613x1	33.17	32.69	65.86	23.69	23.82	47.51	199.02	196.14	395.16	142.14	142.92	285.06
AC565x1	54.26	25.27	79.53	54.26	25.27	79.53	217.04	101.08	318.12	217.04	101.08	318.12

*No non-educational facilities.
**State appropriations for course.

TABLE 5. AGGREGATE GROSS AND NET COSTS OF DIPLOMA PROGRAMS

CODE NUMBER (PARENT INSTITUTION)	NURSING COURSE BY COOPERATING AGENCY	STUDENT WEEKS	GROSS EDUCATIONAL COST	GROSS NON-EDUCATIONAL COST	GROSS COST OF TOTAL PROGRAM	GROSS TOTAL PROGRAM COST PER STUDENT-WEEK	NET TOTAL PROGRAM COST PER STUDENT-WEEK
BM315o1		3,456	$ 42,199	$ 42,588	$ 84,787	$24.53	$22.42
CM216m6		4,284	58,434	67,009	154,705	31.68	27.10
	Psychiatric	600	16,356	12,906			
BM315o5		3,957	68,412	54,841	140,754	32.22	30.42
	Psychiatric	195	2,734	5,008			
	Pediatric	216	1,268	8,491			
CM216m4		3,720	72,868	56,709	144,007	35.72	29.85
	Psychiatric	312	6,315	8,115			
CL315o4		5,988	89,845	116,186	238,952	36.60	34.51
	Psychiatric	492	16,935	14,366			
	Communicable Disease	48	784	836			
BL216m3		7,326	135,822	138,562	291,498	37.49	29.76
	Psychiatric	450	10,256	6,858			
AL176e1		13,118	197,751	312,518	558,386	38.26	30.32
	Psychiatric	1,476	11,365	36,752			
AL216m4		7,392	108,441	176,964	285,405	38.61	32.15
BL115k1		12,624	176,560	324,567	532,646	38.80	32.53
	Psychiatric	1,079	10,963	15,786			
	Communicable Disease[3]	124	4,770				
AL115k3		7,684	150,174	148,608	341,064	38.83	33.39
	Psychiatric	910	9,246	13,313			
	Rehabilitation[4]	248	13,456	6,267			
BL416m1		9,756	131,630	247,159	403,134	38.88	34.99
	Psychiatric	612	10,122	14,223			
CL215m1		11,808	171,403	285,178	464,988	39.38	35.96
	Pediatric[3]	884	8,407				
AL115m3		7,636	165,430	146,991	320,822	39.78	36.44
	Psychiatric	428	2,956	5,445			
CM315o2		3,307	58,417	78,816	141,930	40.23	35.18
	Psychiatric	221	1,722	2,975			
CM215o1		3,421	57,223	83,029	164,976	40.92	36.12
	Psychiatric	299	5,412	3,148			
	Pediatric	312	10,096	6,068			
CS216e1		2,154	45,710	45,245	105,960	41.65	31.96
	Psychiatric	195	3,530	2,053			
	Pediatric	195	4,083	5,339			
CM315o4		3,905	64,315	100,046	175,249	42.08	39.08
	Psychiatric	260	3,637	7,251			
BL316g1		7,065	130,227	184,635	320,366	42.73	38.49
	Psychiatric	432	2,087	3,417			
CS316o1		3,120	73,823	64,615	141,539	42.74	40.14
	Psychiatric	192	682	2,419			
AM416m2		3,085	54,276	80,974	159,604	43.17	35.94
	Psychiatric	273	4,941	2,875			
	Pediatric	267	8,624	5,183			
	Communicable Disease[2]	72	950	1,781			

2. Some costs estimated for this institution.
3. Institution did not provide non-educational functions.
4. Institution provided partial maintenance only.

TABLE 5, Continued

CODE NUMBER (PARENT INSTITUTION)	NURSING COURSE BY COOPERATING AGENCY	STUDENT WEEKS	GROSS EDUCATIONAL COST	GROSS NON-EDUCATIONAL COST	GROSS COST OF TOTAL PROGRAM	GROSS TOTAL PROGRAM COST PER STUDENT-WEEK	NET TOTAL PROGRAM COST PER STUDENT-WEEK
CL316o2		6,210	$113,528	$ 173,259	$ 337,483	$44.78	$40.98
	Psychiatric	650	10,264	14,541			
	Pediatric	676	8,714	17,177			
BM216m3		3,264	65,052	80,817	159,408	44.88	37.45
	Psychiatric	288	6,336	7,203			
BL115k4		11,520	186,854	330,854	517,708	44.94	40.02
BM216m2		4,816	82,302	140,808	236,260	45.16	41.67
	Psychiatric	416	4,056	9,094			
CL316o1		11,812	234,753	303,096	581,579	46.42	42.85
	Psychiatric	552	12,944	19,210			
	Communicable Disease[2, 4]	438	9,732	1,844			
BM316m2		3,546	81,203	89,359	212,200	46.54	44.25
	Psychiatric	494	4,258	14,188			
	Pediatric	520	6,438	16,754			
BM215m3		4,356	64,178	136,826	2[illegible],133	46.96	42.77
	Psychiatric	396	12,720	9,409			
AL115k5		7,677	138,891	214,680	381,813	47.35	44.40
	Psychiatric	387	10,886	17,356			
AM316m1		4,536	103,275	126,708	255,045	47.44	40.78
	Psychiatric	444	1,576	5,594			
	Pediatric	396	2,325	15,567			
BL213o1		12,334	154,845	368,850	559,682	48.07	44.79
	Psychiatric[4]	756	17,131	2,344			
	Obstetric[2, 4]	144	1,168	433			
	Communicable Disease	346	4,705	10,206			
BM115o7		5,180	123,060	130,563	284,539	48.33	45.97
	Psychiatric	372	5,160	12,101			
	Pediatric	336	3,044	10,611			
BL115e1		9,568	164,987	293,477	524,433	48.76	43.46
	Psychiatric	1,047	22,688	32,331			
	Pediatric[4]	678	7,641	3,309			
CM216m1		3,572	84,631	96,594	192,731	48.97	39.82
	Psychiatric	364	3,549	7,957			
CL315m1		5,796	115,357	188,085	309,099	49.54	43.48
	Psychiatric	444	2,145	3,512			
CL215o2		9,806	153,154	336,652	527,034	49.91	48.27
	Psychiatric	754	10,571	19,363			
	Pediatric[3]	767	7,294				
AM314m1		3,648	78,740	104,737	183,477	50.29	47.71
BM115e1		4,560	119,284	122,522	272,032	50.60	42.45
	Psychiatric	396	8,839	7,876			
	Pediatric	420	4,145	9,366			

2. Some costs estimated for this institution.
3. Institution did not provide non-educational functions.
4. Institution provided partial maintenance only.

γ

TABLE 5, Continued

CODE NUMBER (PARENT INSTITUTION)	NURSING COURSE BY COOPERATING AGENCY	STUDENT WEEKS	GROSS EDUCATIONAL COST	GROSS NON-EDUCATIONAL COST	GROSS COST OF TOTAL PROGRAM	GROSS TOTAL PROGRAM COST PER STUDENT-WEEK	NET TOTAL PROGRAM COST PER STUDENT-WEEK
AM216o2		4,287	$116,332	$ 101,571	$ 284,991	$50.75	$46.70
	Psychiatric	507	7,108	13,020			
	Pediatric	546	6,803	17,854			
	Communicable Disease	276	11,084	11,219			
BL115k2		6,450	116,130	230,695	364,227	50.93	46.66
	Psychiatric	702	7,132	10,270			
AM116o1		3,868	84,694	117,167	216,134	50.98	46.64
	Psychiatric	372	2,559	11,714			
BL216m2		6,167	110,513	188,717	336,213	51.13	42.42
	Psychiatric[4]	504	13,366	2,495			
	Pediatric[4]	481	10,072	3,102			
	Rural	246	2,295	5,653			
AM315o3		4,167	71,479	142,075	244,277	51.40	49.70
	Psychiatric	286	9,621	6,950			
	Pediatric	299	5,783	8,369			
CL216e3		5,952	112,872	203,029	335,799	51.50	45.33
	Psychiatric	444	5,577	8,813			
	Communicable Disease	124	1,199	4,309			
BM115i1		5,611	113,172	162,472	292,790	51.69	45.68
	Psychiatric[4]	351	15,149	1,997			
AM115a1		3,566	88,567	96,548	204,181	51.88	45.85
	Psychiatric	364	3,800	11,608			
	Rehabilitation[4]	56	3,039	619			
BS315g1		2,760	71,995	73,849	167,847	52.19	48.58
	Psychiatric	228	4,941	7,041			
	Pediatric	228	2,570	7,451			
CS313o1		2,384	76,832	40,099	119,506	52.44	44.48
	Psychiatric[2, 4]	132	2,249	326			
CM115o2		4,800	116,525	146,693	284,003	52.83	47.24
	Psychiatric	264	3,060	4,256			
	Pediatric	312	3,891	9,578			
AM416m3		3,420	77,298	100,093	197,819	52.84	43.48
	Psychiatric	324	7,031	13,397			
BL316m1		5,628	116,780	194,641	317,429	52.90	49.40
	Psychiatric	372	1,321	4,687			
CL115m2		4,973	106,239	164,028	320,960	53.18	48.35
	Psychiatric	342	2,360	4,347			
	Pediatric	332	4,145	10,205			
	Obstetric	388	9,690	19,946			
AI415g1		5,992	146,800	177,524	393,038	53.23	49.09
	Psychiatric	492	17,215	9,136			
	Pediatric	720	9,540	20,232			
	Communicable Disease	180	6,154	6,437			
CL215o3		7,878	164,876	287,026	498,570	53.27	51.38
	Psychiatric	741	5,320	7,729			
	Pediatric	741	4,594	29,025			

2. Some costs estimated for this institution.
4. Institution provided partial maintenance only.

TABLE 5, Continued

CODE NUMBER (PARENT INSTITUTION)	NURSING COURSE BY COOPERATING AGENCY	STUDENT WEEKS	GROSS EDUCATIONAL COST	GROSS NON-EDUCATIONAL COST	GROSS COST OF TOTAL PROGRAM	GROSS TOTAL PROGRAM COST PER STUDENT-WEEK	NET TOTAL PROGRAM COST PER STUDENT-WEEK
CM215m2		3,312	$ 64,022	$ 111,169	$ 191,204	$53.48	$52.12
	Psychiatric[2]	195	2,547	488			
	Pediatric	234	2,916	7,652			
	Communicable Disease[3]	60	2,410				
AL216ml		13,556	155,338	602,632	802,420	53.58	50.26
	Psychiatric	910	9,437	12,358			
	Communicable Disease	510	4,932	17,723			
CM115o6		5,204	122,007	155,127	290,657	53.59	50.56
	Psychiatric	220	2,191	11,332			
DM115gl		3,204	85,133	93,906	200,670	53.60	47.00
	Psychiatric	276	6,616	3,618			
	Pediatric	264	3,292	8,105			
CS215o1		2,599	75,927	71,382	163,250	53.98	50.41
	Psychiatric	204	2,191	2,160			
	Pediatric	221	5,596	5,994			
BL115ml		8,986	179,271	299,324	525,801	54.04	45.65
	Psychiatric	744	18,168	29,038			
CL216e2		6,700	145,726	223,120	400,972	54.24	50.13
	Psychiatric	672	11,303	16,753			
	Outpatient[4]	120	3,488	582			
BM115k1		4,056	126,213	110,768	271,115	54.31	49.07
	Psychiatric	396	4,134	12,628			
	Pediatric	540	5,330	12,042			
DM216e1		3,249	90,769	95,841	207,991	54.62	43.09
	Psychiatric	286	5,177	3,012			
	Pediatric	273	5,717	7,475			
CM213ml		3,960	98,767	116,030	245,969	55.10	47.43
	Psychiatric	504	12,524	18,648			
BL315o1		5,104	105,332	206,552	346,497	55.53	50.16
	Psychiatric	432	2,087	3,417			
	Pediatric	468	2,747	18,397			
	Communicable Disease	236	3,854	4,111			
BL115m4 (Footnote 1)		16,812	445,686	431,564	1,093,599	55.85	51.46
	Psychiatric	1,392	63,374	47,464			
	Obstetric	1,380	34,489	71,012			
BM115o8		4,284	120,477	113,340	258,765	56.16	51.62
	Psychiatric	324	10,281	14,667			
AL315g1		11,040	299,846	309,010	620,469	56.20	50.93
	Public Health[3]	429	11,613				
DM416m4		4,480	122,168	131,152	253,320	56.55	48.25
CM213o1		3,042	76,726	103,961	195,712	56.70	50.63
	Psychiatric[4]	221	1,587	1,848			
	Pediatric	221	5,596	5,994			
BL315o3		7,590	201,666	233,924	446,789	56.76	54.81
	Psychiatric	282	3,955	7,244			
CL316m4		5,441	112,612	204,632	338,233	56.82	52.97
	Psychiatric	415	3,197	10,338			
	Communicable Disease	96	4,593	2,861			

1. One or more bases of allocation were modified for the parent institution.
2. Some costs estimated for this institution.
3. Institution did not provide non-educational functions.
4. Institution provided partial maintenance only.

TABLE 5, Continued

CODE NUMBER (PARENT INSTITUTION)	NURSING COURSE BY COOPERATING AGENCY	STUDENT WEEKS	GROSS EDUCATIONAL COST	GROSS NON-EDUCATIONAL COST	GROSS COST OF TOTAL PROGRAM	GROSS TOTAL PROGRAM COST PER STUDENT-WEEK	NET TOTAL PROGRAM COST PER STUDENT-WEEK
AL115k6		10,785	$313,884	$ 319,826	$ 652,617	$57.13	$50.39
	Psychiatric[2]	639	6,607	12,300			
CL114k1		6,104	143,316	225,160	402,805	57.48	36.74
	Psychiatric	432	1,905	11,340			
	Pediatric	432	5,387	13,262			
	Outpatient	40	801	1,634			
DM216o1		4,222	110,010	142,892	262,579	57.58	53.42
	Psychiatric	338	6,118	3,559			
CM216e2		4,352	132,484	127,138	269,397	57.76	52.33
	Psychiatric	312	6,524	3,251			
CM316o1		4,737	89,568	192,586	295,597	58.10	52.39
	Pediatric	351	4,524	8,919			
CL115m5		7,236	171,271	257,964	451,780	58.10	54.73
	Psychiatric	540	9,083	13,462			
AM115o5		3,484	92,472	123,864	226,373	58.96	57.22
	Psychiatric	356	2,392	7,645			
CS115o3		2,496	75,047	78,452	170,654	59.25	58.18
	Psychiatric	180	2,542	4,725			
	Pediatric	204	4,621	5,267			
AM216e4		5,616	94,068	239,691	333,759	59.43	57.49
BM215m1		3,774	63,835	181,721	282,118	59.97	48.32
	Psychiatric	372	1,841	12,161			
	Pediatric	372	1,934	12,161			
	Communicable Disease	186	2,385	6,080			
CS314o1		1,452	53,224	37,265	98,025	60.06	58.13
	Psychiatric	180	4,027	2,842			
	Communicable Disease[2,3]	30	667				
CS316m1		2,368	67,757	90,103	173,247	60.16	51.62
	Psychiatric	240	852	3,024			
	Pediatric	204	1,197	8,019			
	Communicable Disease	68	1,110	1,185			
CM115o1		4,066	109,963	137,462	251,473	60.21	59.08
	Psychiatric	110	960	3,088			
AL41311		7,620	162,839	272,491	489,589	60.35	26.11
	Psychiatric	120	4,406	1,458			
	Psychiatric	372	11,264	15,122			
	Public Health[3]	173	22,009				
CL216m5		7,164	188,732	277,810	508,359	61.57	57.52
	Psychiatric	546	7,655	14,021			
	Pediatric	546	5,192	14,949			
BM155m1		3,774	121,862	115,862	344,787	61.92	57.00
	Psychiatric	455	20,716	15,516			
	Obstetric	481	12,025	24,752			
	Medical-surgical	858	2,154	31,900			
AM214m1		3,648	89,011	137,165	226,176	62.00	58.77

2. Some costs estimated for this institution.
3. Institution did not provide non-educational functions.

TABLE 5, Continued

CODE NUMBER (PARENT INSTITUTION)	NURSING COURSE BY COOPERATING AGENCY	STUDENT WEEKS	GROSS EDUCATIONAL COST	GROSS NON-EDUCATIONAL COST	GROSS COST OF TOTAL PROGRAM	GROSS TOTAL PROGRAM COST PER STUDENT-WEEK	NET TOTAL PROGRAM COST PER STUDENT-WEEK
CL115o2		9,395	$250,767	$ 349,129	$ 655,906	$62.11	$58.76
	Psychiatric	586	14,828	8,029			
	Obstetric	580	5,083	28,070			
BM115k2		3,020	83,884	111,251	209,061	62.23	58.01
	Psychiatric	145	3,964	3,708			
	Pediatric	194	1,919	4,335			
BS315m1		2,380	57,252	87,598	158,762	62.31	59.00
	Psychiatric	168	6,102	7,810			
AL312o1		12,048	277,465	473,607	751,072	62.34	59.48
BM216e3		3,101	123,059	79,934	218,454	63.20	55.27
	Psychiatric	282	5,188	5,490			
	Communicable Disease	73	1,460	3,323			
BL115o1		5,012	151,371	186,346	404,783	63.89	55.23
	Psychiatric[4]	456	6,936	7,533			
	Pediatric	432	5,387	13,262			
	Obstetric	444	11,100	22,848			
BS115o2		2,832	82,422	100,464	201,173	64.11	61.08
	Psychiatric	216	5,469	2,961			
	Communicable Disease	90	1,829	2,425			
	Public Health[3]	90	5,603				
AM414p1		3,687	96,467	135,685	244,815	64.22	64.22
	Psychiatric[4]	150	5,508	669			
	Private Patient	100	1,179	5,307			
BM115o3		4,224	94,699	179,493	291,467	64.59	61.36
	Psychiatric	288	6,391	10,884			
AL216e1		23,136	495,947	1,017,468	1,513,415	65.42	53.68
AM215e1		3,944	121,676	135,081	258,205	65.47	52.44
	Psychiatric[2, 4, 5]	312		1,448			
CS315o1		1,398	38,345	63,899	111,744	68.47	64.64
	Psychiatric	143	2,001	3,988			
	Pediatric	91	1,180	2,331			
AM115p1		4,256	101,250	204,714	347,530	69.62	69.62
	Psychiatric	504	10,922	15,564			
	Communicable Disease	232	7,563	7,517			
BL416e1		5,209	173,862	182,497	388,573	70.65	57.58
	Psychiatric	272	13,026	12,387			
	Communicable Disease[4]	136	4,620	571			
	Orthopedic-children[2, 3]	136	1,610				
AM216m5		2,910	89,800	127,024	235,142	70.76	63.85
	Psychiatric	192	2,058	4,080			
	Pediatric	221	1,370	8,657			
	Public Health[3]	65	2,153				
CS115o1		2,496	76,369	108,559	197,624	70.99	68.45
	Psychiatric	156	2,203	4,095			
	Pediatric	132	2,990	3,408			

2. Some costs estimated for this institution.
3. Institution did not provide non-educational functions.
4. Institution provided partial maintenance only.
5. Institution did not provide educational functions.

TABLE 5, Continued

CODE NUMBER (PARENT INSTITUTION)	NURSING COURSE BY COOPERATING AGENCY	STUDENT WEEKS	GROSS EDUCATIONAL COST	GROSS NON-EDUCATIONAL COST	GROSS COST OF TOTAL PROGRAM	GROSS TOTAL PROGRAM COST PER STUDENT-WEEK	NET TOTAL PROGRAM COST PER STUDENT-WEEK
CS216ml		956	$ 42,903	$ 37,667	$ 102,737	$71.34	$61.44
	Psychiatric	216	4,752	5,402			
	Pediatric	132	4,105	2,907			
	Obstetric	120	1,067	3,264			
	Operating Room	16	235	435			
CS115il		3,193	96,063	115,537	231,922	72.11	63.58
	Psychiatric[4]	416	17,955	2,367			
CM114ol		4,800	115,233	244,674	374,145	72.17	69.59
	Psychiatric	384	9,204	5,034			
BS416ml		2,189	79,422	80,150	170,036	73.90	49.95
	Psychiatric	112	5,364	5,100			
BS125ml		1,098	70,173	37,442	160,222	74.32	70.54
	Pediatric	130	2,375	3,337			
	Pediatric	72	898	2,210			
	Obstetric	208	5,200	10,704			
	Medical-surgical	648	11,249	16,634			
BL316m3		5,750	167,633	307,087	507,742	76.10	69.76
	Psychiatric	444	5,577	8,813			
	Pediatric	455	5,715	8,741			
	Communicable Disease[2,4]	144	3,708	468			
CS313el		2,880	115,958	118,586	239,517	76.91	71.25
	Psychiatric	234	1,823	3,150			
AS114o2		2,503	95,451	100,947	199,889	79.86	66.52
	Public Health[3]	58	3,491				
BS214ol		2,186	93,060	97,129	216,097	81.06	76.93
	Psychiatric	240	4,498	4,841			
	Pediatric	240	4,891	11,004			
	Communicable Disease[2,3]	80	674				
BL413pl		11,205	411,672	500,079	911,751	81.37	81.37
AM111[illegible]		3,724	141,879	171,341	330,246	81.58	4.21
	Psychiatric	324	7,021	10,005			
BL114pl		5,412	181,799	247,115	470,563	81.69	81.69
	Psychiatric	348	7,778	33,871			
CS114ol		3,027	89,649	167,041	276,786	84.18	80.35
	Psychiatric	261	8,282	11,815			
CS115gl		2,088	82,496	111,959	221,178	86.53	81.87
	Psychiatric	240	12,852	3,850			
	Pediatric	228	2,570	7,451			

[2] Some costs estimated for this institution.

[3] Institution did not provide non-educational functions.

[4] Institution provided partial maintenance only.

NATURE OF INCOME

The term income as used in this study pertains to receipts that were identified by an institution as being creditable to nursing education. Real income refers to income recorded in the hospital's account and credited to nursing education. Derived income is the result of an estimate of the value of the student's clinical experience to nursing service. Most of the participating institutions had available at the time of the study a fiscal report for the year. Each report showed a balanced account; none indicated that the institution was operating at a deficit. One could argue that since the nonprofit institution had sufficient income to cover its expenses, the cost analysis of its nursing program was, in effect, a statement of the income to the nursing program. That is, if there was no deficit for the institution as a whole, the cost of each function of the institution, including nursing education, must have been covered by income. To one who so argues, income as used in this study would imply intention of the person who pays or donates money to the institution. Taking the approach that balanced accounts indicate sufficient income to cover all expenditures, one hospital administrator stated:

> Patients' fees and third-party payments cover only a portion of our operating cost. The remainder is met by the community. The fact that we have a program to supply nurses is a big selling-point in raising funds for the hospital. Who is to say how much or how little of these funds was intended for the school of nursing?

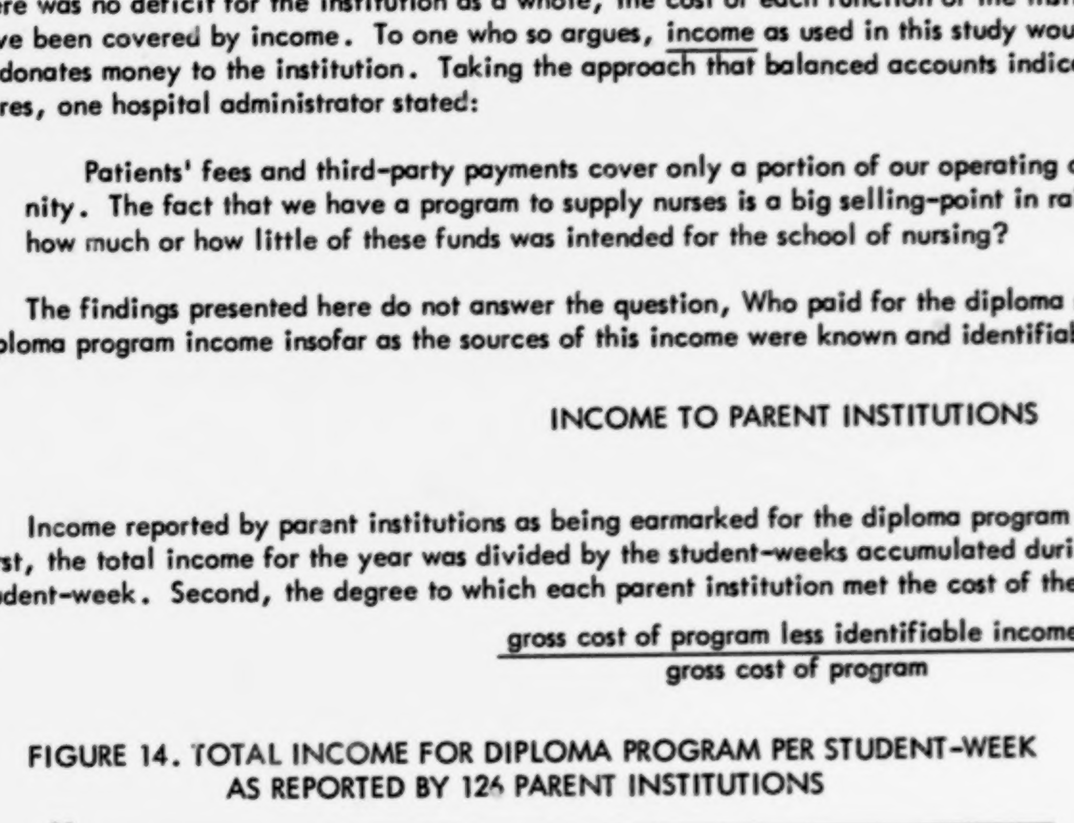
The findings presented here do not answer the question, Who paid for the diploma nursing programs? The findings pertain to diploma program income insofar as the sources of this income were known and identifiable.

INCOME TO PARENT INSTITUTIONS

Income reported by parent institutions as being earmarked for the diploma program in nursing was considered in two ways. First, the total income for the year was divided by the student-weeks accumulated during the year. The result was income per student-week. Second, the degree to which each parent institution met the cost of the program was computed as follows:

$$\frac{\text{gross cost of program less identifiable income}}{\text{gross cost of program}}$$

FIGURE 14. TOTAL INCOME FOR DIPLOMA PROGRAM PER STUDENT-WEEK AS REPORTED BY 126 PARENT INSTITUTIONS

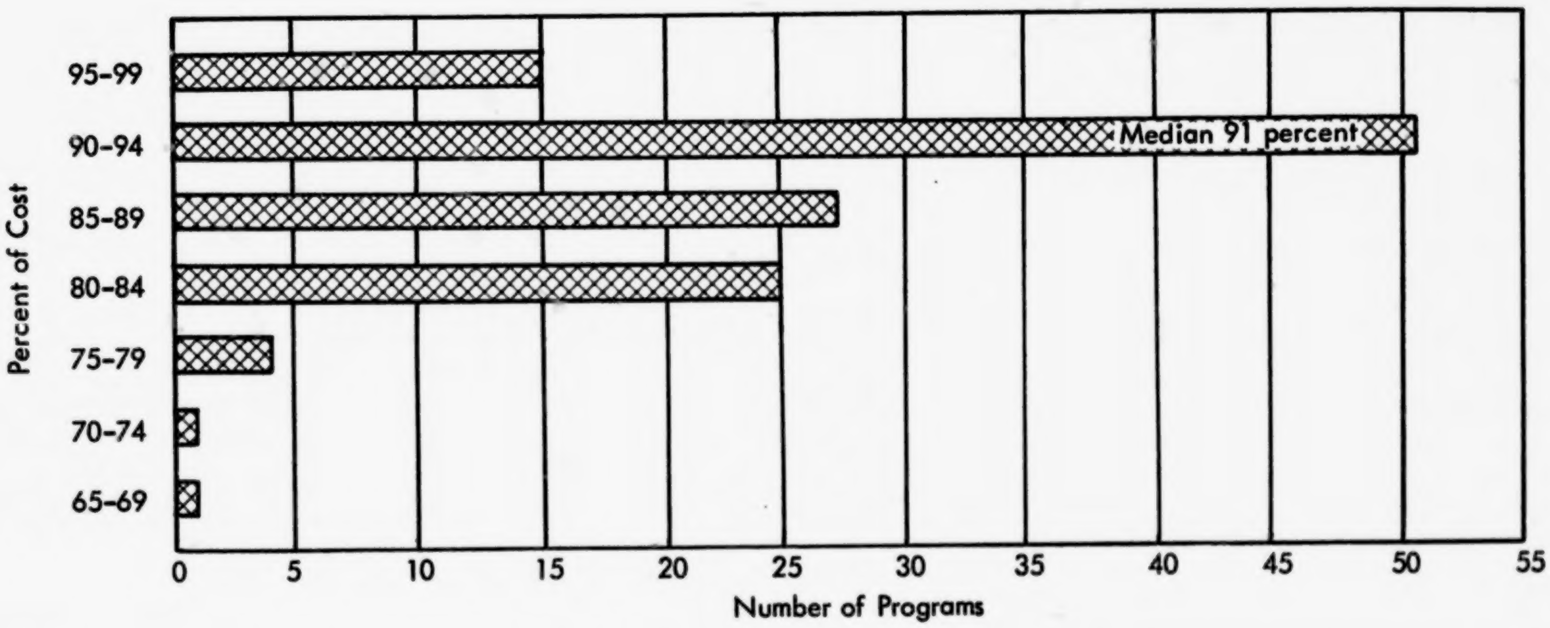


The distribution of income per student-week in all (126) parent institutions is shown in Figure 14. Figure 15 depicts the percent of the cost of the program met by each parent institution as computed by the above formula. In Figure 15 and in the statistical analyses, the data were limited to those from 119 parent institutions with comparable income reports. The data that were excluded were based upon definitions of income that differed from the definition in the study.

The percent of the gross cost of the program met by the parent institution, rather than net cost, was used as the dependent variable in the statistical analyses in this part of the study. The relatively high correlations between net cost and gross cost in parent institutions limited the possibilities for findings beyond those pertaining to gross costs.

Spearman rank correlation coeffi-

FIGURE 15. PERCENT OF COST OF DIPLOMA PROGRAM MET BY PARENT INSTITUTION
(119 Programs)



cients were computed for each institution for the net and gross costs of educational functions, noneducational functions, and educational and noneducational functions. These were as follows:

Between gross cost and net cost of educational functions	.886
Between gross cost and net cost of noneducational functions	.870
Between gross cost and net cost of educational and noneducational functions	.890

There was no evidence of any significant correlation between the gross cost of the nursing program and the portion of the gross cost met by the parent institution. The coefficient of correlation (r_s) was .013, which with this number of cases is not significantly different from zero.

Relationship of Variables to the Portion of Cost Borne by the Parent Institution

The 119 programs with comparable records of income were ranked according to the portion of the cost of educational and noneducational functions that had to be met by the parent institution. The parent institution that met the greatest percent of the cost was ranked 119. The parent institution that met the smallest percent of the cost was ranked 1. The average rank for all of the 119 programs was 60.00. A rank above this figure indicated that the institution had to meet more of these costs than did the median institution.

Using these ranks, tests were made for significant relationships between the portion of the cost paid by the parent institution and certain independent variables. In addition to the previously cited variables, two additional variables were investigated: (1) whether or not any income was earmarked for the noneducational functions of the program and (2) whether or not income included other than payments made by students. Both variables are based upon data included in the income reports. Of the 119 programs, 60 (50.4 percent) had some income identified as noneducational and 32 (26.9 percent) had some income from sources other than students.

The ranks were sorted by fiscal year to determine whether or not the percent of the cost of educational and noneducational functions met by the parent institution varied significantly among the subgroups. In the following data, a rank above 60.00 indicates that the portion of the cost met by the parent institutions in the subgroup was greater than the portion met by the median institution.

Subgroup by Fiscal Year	Number of Cases in Subgroup	Rank of Subgroup as to Portion of Cost Borne by Parent Institution	
		Average Rank	Average Rank Minus 60.00*
1959	28	59.43	-0.57
1960	41	56.07	-3.93
1961 or 1962	50	63.54	3.54

*The average rank of all (119) cases.

There was no significant difference among the fiscal year subgroups in the portion of the cost of the program borne by the parent institution. The Kruskal-Wallis one-way analysis of variance applied to the data on the previous page resulted in a chi-square of 1.07 at 2 degrees of freedom (p > .50).

Significant differences occurred when the ranks were sorted into subgroups by type of control of the parent institution. Data pertaining to this variable were as follows:

Subgroup by Type of Control	Number of Cases in Subgroup	Rank of Subgroup as to Portion of Cost Borne by Parent Institution	
		Average Rank	Average Rank Minus 60.00*
Public (governmental)	16	77.63	17.63
Private secular	60	66.32	6.32
Private religious	43	44.63	-15.37

*The average rank of all (119) cases.

The result of the Kruskal-Wallis one-way analysis of variance indicated that differences among all subgroups were significant at the .001 level of probability (chi-square = 14.73 at 2 degrees of freedom).

When considered separately, each of two subgroups differed significantly from all other cases considered as one subgroup.

Subgroup by Type of Control	Standard Score (z)	Probability
Public (governmental)	2.20	<.03
Private religious	3.66	<.0004

There was no significant relationship between enrollment size and percent of cost met by the parent institution. Data pertaining to this relationship were as follows:

Subgroup by Enrollment Size	Number of Cases in Subgroup	Rank of Subgroup as to Portion of Cost Borne by Parent Institution	
		Average Rank	Average Rank Minus 60.00*
Small	23	70.04	10.04
Medium	50	57.16	-2.84
Large	46	58.07	-1.93

*The average rank of all (119) cases.

The result of the Kruskal-Wallis one-way analysis of variance applied to these data was a chi-square of 2.43 at 2 degrees of freedom (p > .20).

Considered separately, no enrollment-size subgroup differed significantly from all other cases considered as one subgroup with respect to portion of cost borne by the parent institution.

When the ranks were sorted according to NLN region, significant differences were apparent. Data resulting from this sorting were as follows:

Subgroup by NLN Region	Number of Cases in Subgroup	Rank of Subgroup as to Portion of Cost Borne by Parent Institution	
		Average Rank	Average Rank Minus 60.00*
Region I	43	63.44	3.44
Region II	37	50.95	-9.05
Region III	32	73.94	13.94
Region IV	7	23.00	-37.00

*The average rank of all (119) cases.

The average rank of Region IV (the West) was 50.94 ranks lower than the average rank of Region III (the South) in percent of cost borne by parent institution. The results of the Kruskal-Wallis one-way analysis of variance indicated that there was a significant variance among all regional subgroups (chi-square = 16.25 at 3 degrees of freedom; $p < .01$).

When considered separately, each of two subgroups was found to differ significantly from all other cases considered as one subgroup.

Subgroup by NLN Region	Standard Score (z)	Probability
Region III	2.93	< .004
Region IV	2.67	< .008

The ranks were sorted into two subgroups according to whether or not some income was earmarked for noneducational functions. The data pertaining to this variable were as follows:

Subgroup	Number of Cases in Subgroup	Rank of Subgroup as to Portion of Cost Borne by Parent Institution	
		Average Rank	Average Rank Minus 60.00*
Some noneducational income	60	47.02	-12.98
No noneducational income	59	73.02	13.02

*The average rank of all (119) cases.

A Mann-Whitney U test applied to these data resulted in a standard score (z) of 3.82, which was significant at the .0002 level of probability.

The ranks were sorted into two subgroups according to whether or not students constituted the only source of income. Data from this operation were as follows:

Subgroup	Number of Cases in Subgroup	Rank of Subgroup as to Portion of Cost Borne by Parent Institution	
		Average Rank	Average Rank Minus 60.00*
Students the only source of income	87	65.84	5.84
Students not the only source of income	32	44.13	-15.84

*The average rank of all (119) cases.

The Mann-Whitney U test applied to these data resulted in a standard score (z) of 3.04, which was significant at the .003 level of probability.

Certain variables were significantly related to the portion of the cost of educational and noneducational functions that was borne by the parent institution. Parent institutions in the South (NLN Region III) tended to bear a higher portion of this cost than did those in other areas. Parent institutions in the West (NLN Region IV) tended to bear a lesser portion of the cost than did those in other areas. Parent institutions under public control bore a higher portion of the cost than did those under private control. Parent institutions under the control of a religious organization bore a lesser portion of the cost than did those under any other type of control. Parent institutions that identified part of the income as defraying the cost of noneducational functions bore a lesser portion of the cost than did institutions that did not make this identification. Parent institutions in which the source of a diploma program income was limited to students bore a relatively greater portion of the cost than did those with other sources of income.

INCOME DESIGNATED FOR THE TOTAL PROGRAM

Income earmarked for the total program included, in addition to the foregoing, income designated for nursing education in each cooperating agency. Cooperating agencies and parent institutions differed significantly from one another in the amount of income per student-week. This difference is apparent in the following table.

Income per Student-week	Parent Institutions		Cooperating Agencies	
	Number	Percent	Number	Percent
$10.00 and over	15	11.9	7	5.9
$5.00 to $9.99	49	38.9	1	0.8
$1.00 to $4.99	57	45.2	11	9.3
Less than $1.00	5	4.0	100	84.0
Total	126	100.0	119	100.0

Four of the 5 parent institutions reporting income of less than $1.00 per student-week were programs whose data were omitted in the statistical analyses. Of the 100 cooperating agencies reporting income of less than $1.00 per student-week, 82 were unable to identify income from any source that was intended for nursing education.

As shown in the following table, similar differences occurred when parent institutions and cooperating agencies were compared as to the portion of cost of nursing education that was covered by income.

Percent of Cost Covered by Institution or Agency	Number of Parent Institutions	Number of Cooperating Agencies
More than 95	15	106
90-94.9	51	3
85-89.9	27	3
80-84.9	20	0
75-79.9	4	5
Less than 75	2	2
Total	119	119

The lack of any appreciable income to most cooperating agencies indicated that results of any statistical analyses of net costs would have been repetitive of analyses already applied to gross costs. Eighty-two cooperating agencies met 100 percent of the cost of nursing courses for diploma students and thus had identical ranks. Therefore, analyses of ranks based on such percentages were contraindicated.

Findings from statistical analyses of the relationship between the dependent variable percent of total program cost met by all agencies and the independent variables are not reported here. They are identical with applicable findings reported earlier in this section under the subhead Relationship of Variables to the Portion of Cost Borne by the Parent Institution. The Spearman rank correlation coefficient for the programs ranked by percent of cost met by the parent institution and percent of cost met by all institutions offering parts of the program was an r_s of .982.

DERIVED INCOME: PROFESSIONAL ABILITY-USABILITY VALUES

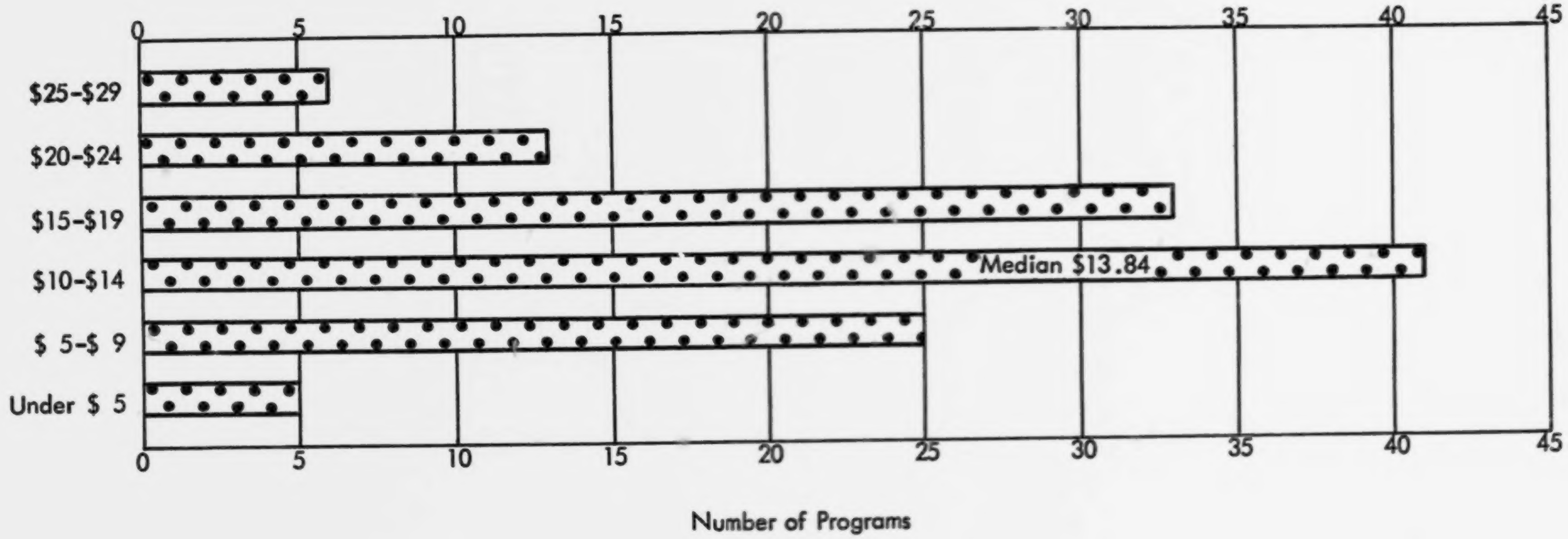
The foregoing considerations of income were limited to real income--real in the sense that it could be substantiated by fiscal records of money that had changed hands. Some of the data collected for the study pertained to derived income--derived in the sense that it was "gathered by inference" (Webster) or was estimated. These data were used to derive a unit that was the value of the students' clinical experiences to the institution per student-week.

Figure 16 shows the distribution of the value of the students' experiences (1) to the parent institution and (2) to all institutions participating in the program.

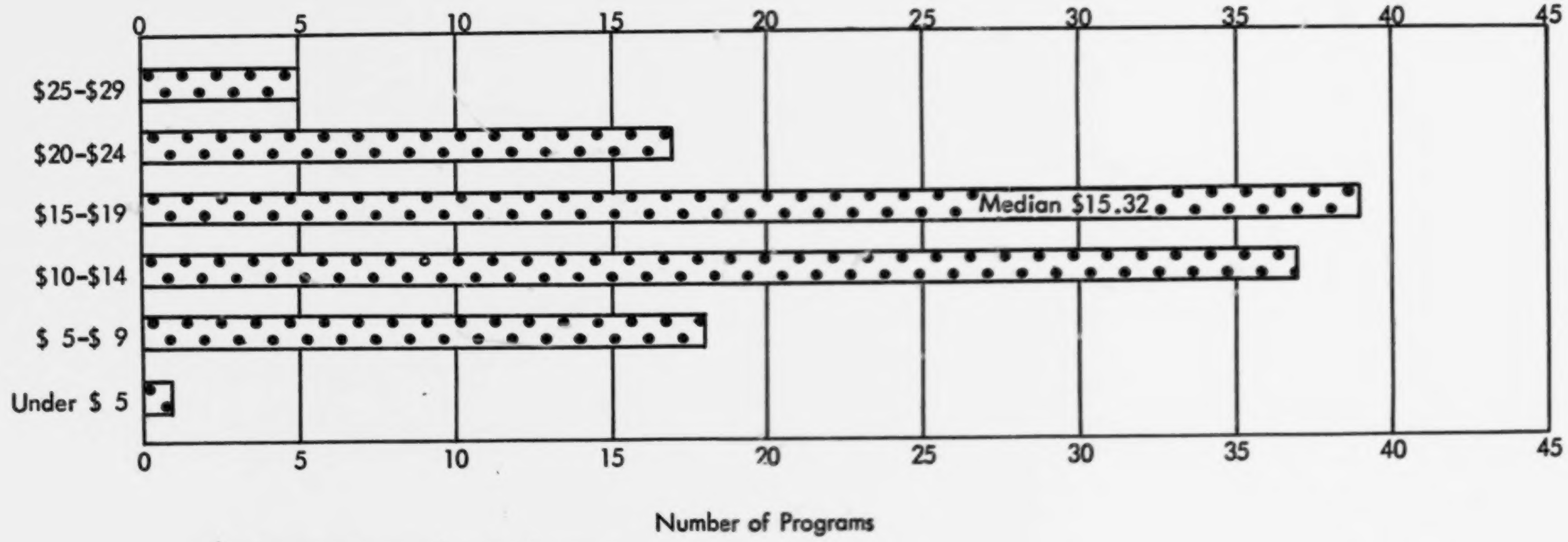
The value per student-week obtained by the professional ability-usability method was subjected to the same statistical tests that were applied to the gross cost data. Each parent institution was ranked as to value per student-week, so that the institution

FIGURE 16. ESTIMATED WEEKLY VALUE OF STUDENTS' CLINICAL EXPERIENCES

To Parent Institutions*
(123 Programs)



To Parent Institutions and Cooperating Agencies
(117 Programs**)



*Information incomplete for 3 programs.
**Information incomplete for 9 programs

in which students had least value was ranked 1 and the institution in which students had greatest value was ranked 123 (3 of the 126 programs did not participate in this part of the study). The average rank for all institutions was 62.00. For purposes of comparison, this over-all average was subtracted from the average rank of individual subgroups. When the result was a positive number, the indication was that the value was greater than the over-all average. When the result was a negative number, the indication was that the value was less than the average.

Such comparisons appear in the following data pertaining to the value of students' contributions by geographic regional subgroups.

Subgroup by NLN Region	Number of Cases in Subgroup	Rank of Subgroup as to Professional Ability-Usability Value	
		Average Rank	Average Rank Minus 62.00*
Region I	46	71.13	9.13
Region II	35	66.71	4.71
Region III	32	44.50	-17.50
Region IV	10	59.50	-2.50

*The average rank of all (123) cases.

The last column of the table indicates that in Region I (the North Atlantic) the professional ability-usability value averaged 9.13 ranks above the over-all average and that in Region III (the South) the value of students averaged 17.50 ranks below the over-all average. Differences among the subgroups, as determined by a Kruskal-Wallis one-way analysis of variance, were significant at the .01 level of probability (chi-square = 11.39 at 3 degrees of freedom).

When each regional subgroup was compared with all other cases considered as one subgroup, two subgroups differed significantly from all others. The pertinent data were as follows:

Subgroup by NLN Region	Standard Score (z)	Probability
Region I	2.20	<.03
Region III	3.23	<.002

There was no evidence of significant differences when the ranks were sorted into subgroups according to the type of control. Data pertaining to this comparison were as follows:

Subgroup by Type of Control	Number of Cases in Subgroup	Rank of Subgroup as to Professional Ability-Usability Value	
		Average Rank	Average Rank Minus 62.00*
Federal, state, and county government	10	40.90	-21.10
City government	11	63.45	1.45
Private secular	60	66.75	4.75
Private religious	42	59.68	-2.14

*The average rank of all (123) cases.

The average rank of the first subgroup, institutions under the control of federal, state, and county governments, was 21.10 ranks lower than the over-all average. When this subgroup was compared with all other cases considered as one subgroup, the resulting standard score (z) was 1.95, which was significant at the .05 level of probability. No other type-of-control subgroup differed from all other cases at this level of significance.

When the ranks were sorted according to enrollment size, the differences among all subgroups were significant. Data based on this sorting were as follows:

Subgroup by Enrollment Size	Number of Cases in Subgroup	Rank of Subgroup as to Professional Ability-Usability Value	
		Average Rank	Average Rank Minus 62.00*
Small	23	43.61	-18.39
Medium	53	64.91	2.91
Large	47	67.72	5.72

*The average rank of all (123) cases.

The Kruskal-Wallis one-way analysis of variance applied to these data resulted in a chi-square of 7.68 at 2 degrees of freedom, which was significant at the .05 level of probability.

Further testing indicated that the subgroup small enrollment size differed significantly from all other cases considered as one subgroup (standard score (z) = 2.75; p <.007).

The following data did not reveal a significant relationship between the value of students' learning experiences per student-week and the number of cooperating agencies offering parts of the program.

Subgroup by Number of Cooperating Agencies	Number of Cases in Subgroup	Rank of Subgroup as to Professional Ability-Usability Value	
		Average Rank	Average Rank Minus 62.00*
None	9	72.44	10.44
One	47	67.17	5.17
Two	44	55.64	-6.36
Three or more	23	59.62	-2.38

*The average rank of all (123) cases.

The result of the Kruskal-Wallis one-way analysis of variance performed here was a chi-square of 3.01 at 3 degrees of freedom (p >.30). No significant relationships were apparent when each subgroup was compared with all other cases considered as one subgroup.

The ranks based upon professional ability-usability values were examined for differences among fiscal year subgroups.

The general duty nurse's median salary increased 8 percent between February, 1959, and June, 1961.[1] The base salary used in the professional ability-usability method--the salary that each hospital paid to the beginning general duty nurse--increased similarly during the study period. Assuming that all other variables remained constant, the value of the students' clinical experiences would have increased during this period. However, the differences in professional ability-usability values during the study period were in a direction opposite from that which would have been predicted from salary changes alone, as the following data show.

Subgroup by Fiscal Year	Number of Cases in Subgroup	Rank of Subgroup as to Professional Ability-Usability Value	
		Average Rank	Average Rank Minus 62.00*
1959	29	78.00	16.00
1960	43	62.05	0.05
1961 or 1962	51	52.86	-9.14

*The average rank of all (123) cases.

The result of the Kruskal-Wallis one-way analysis of variance applied to these data was a chi-square of 9.19 at 2 degrees of freedom, which was significant at the .02 level of probability.

---

1. American Nurses' Association. Facts About Nursing, A Statistical Summary. 1962-1963 ed. New York, the Association, 1963, p. 133.

When each fiscal-year subgroup was compared with all other cases considered as one subgroup, it was found that the value per student-week was significantly greater for the 1959 subgroup and significantly less for the 1961-1962 subgroup. The differences were as follows:

Subgroup by Fiscal Year	Standard Score (z)	Probability
1959	2.76	$< .006$
1961 or 1962	2.39	$< .02$

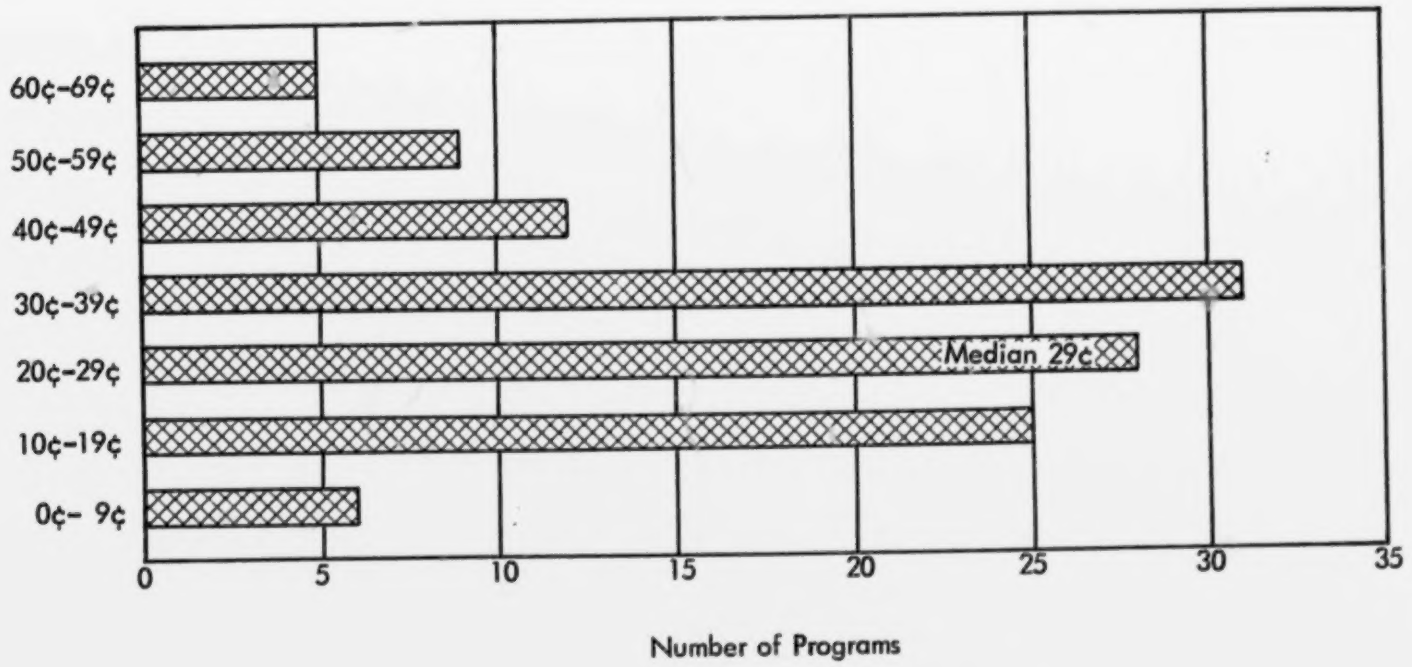
Statistical analyses of the professional ability-usability estimates for each of the 123 participating diploma programs showed significant relationships between certain variables and the nursing service value of the students' clinical experiences. According to the findings, these experiences were: (1) more valuable in NLN Region I than in all other regions and less valuable in Region III; (2) less valuable in institutions under the control of federal, state, and county governments than in institutions under other types of control; (3) less valuable in programs with less than 70 students than in programs with 70 or more students; (4) more valuable in programs studied in 1959 than in programs studied later and less valuable in programs studied in 1961-1962 than in programs studied earlier.

There was no significant evidence that the nursing service value of the students' clinical experience was related to the status of the programs with respect to NLN accreditation. Of the 22 programs that lacked accreditation, 16 had values that were below the median for all 123 programs. The average rank for programs lacking accreditation was 50.95, or 11.05 ranks below the overall average. The result of a Mann-Whitney U test to determine whether or not this difference was significant was a standard score (z) of 1.60 ($p > .10$).

As explained in a previous section, the dollar values computed by cost analysis and dollar values derived by the professional ability-usability method are not held to be comparable. No mathematical computations involving combinations of these values were done. The table at the end of this section lists net costs and professional ability-usability values. The net costs were computed by subtracting real income and not the estimated value of students' clinical experiences. However, certain operations were performed that did not require equating dollar values of real income with those of derived income.

The result of the first operation is shown in Figure 17. The figure plots the distribution of 116 programs[1] according to the estimated weekly value of students' clinical experience per weekly net dollar of cost to the parent institution. The student in the typical (median) program had an estimated value of 29 cents for every dollar of net cost to the parent institution.

FIGURE 17. ESTIMATED WEEKLY VALUE OF STUDENT'S CLINICAL EXPERIENCE PER DOLLAR OF NET COST OF EDUCATIONAL AND NONEDUCATIONAL FUNCTIONS TO PARENT INSTITUTIONS
(116 Programs)



---

[1] Of the 126 participating programs, 116 had both comparable records of income and data pertaining to the value of students' clinical experiences.

The second operation used the ranks of parent institutions based upon net cost per student-week and the professional ability-usability value per student-week. A coefficient of correlation was determined in such a way that a positive correlation would indicate that the greater the net cost, the greater the value of the students' clinical experiences. The result, $r_s = -.140$, while negative, did not differ significantly from a zero correlation between these two ranks.

Table 6 shows the data used in the two operations--the net cost of educational and noneducational functions and the estimated value of students' clinical experiences per student-week--for each of the 116 programs.

TABLE 6. NET COSTS AND DERIVED INCOME PER STUDENT-WEEK OF DIPLOMA PROGRAM

Code Number of Parent Institution	Net Cost per Student-Week		Derived Income per Student-Week	
	To Parent Institution	For Total Program	To Parent Institution	For Total Program
BM315o1	$22.42	$22.42	$ 3.35	$ 3.35
CL316o1	42.48	42.85	3.73	5.05
CL315o4	32.28	34.51	4.97	5.71
CM114o1	72.19	69.59	5.12	6.13
CS313o1	43.61	44.48	6.42	6.42
BS315g1	48.82	48.58	6.19	7.01
AM111i1*	0	4.21	7.46	7.46
BL316g1	40.06	38.49	7.36	7.73
CS316m1	57.10	51.62	4.72	7.81
BS416m1	47.73	49.95	7.23	8.14
BS115o2	62.21	61.08	7.57	8.62
BL416e1	55.97	57.58	6.66	8.70
BL413p1	81.37	81.37	8.97	8.97
CM115o1	59.69	59.08	8.86	8.99
DM115g1	48.28	47.00	6.46	9.10
CS314o1	60.77	58.13	7.43	9.24
CS315o1	68.66	64.64	6.53	9.40
CM216m6	24.07	27.10	7.69	9.45
AM215e1	52.69	52.44	9.49	9.49
CL216e2	50.89	50.13	8.46	10.20
CM215m2	53.59	52.12	7.85	10.25
CM216m4	28.48	29.85	9.94	10.40
CS313e1	75.35	71.25	9.11	10.82
AL115k5	42.97	44.40	10.75	10.92
BL315o1	55.53	50.16	9.06	11.39
BS214o1	83.52	76.93	5.44	11.44
BM115k2	60.06	58.01	9.90	11.79
AL312o1	59.48	59.48	11.93	11.93
BM115i1	44.23	45.68	10.83	12.00
CL316m4	54.31	52.97	10.35	12.03
DM416m4	48.25	48.25	12.22	12.22
AM315o3	49.31	49.70	10.58	12.22
CM215o1	35.51	36.12	11.70	12.30
CM316o1	53.47	52.39	12.65	12.61
CM213o1	52.79	50.63	9.72	12.85
BL115e1	43.21	43.46	14.25	12.97
AM216m5	67.49	63.85	11.78	13.06
BL216m3	29.26	29.76	12.79	13.27
CM115o6	50.10	50.56	12.07	13.30
BM216m2	42.60	41.67	12.27	13.36
AL216m1	52.25	50.26	13.54	13.70
AM115p1	71.89	69.62	16.11	13.74
CM216e2	53.87	52.33	12.72	13.74
BM115o7	46.30	45.97	12.96	13.81
CS316o1	41.73	40.14	13.63	13.90
CL215o2	50.16	48.27	11.78	13.99
BM216m3	38.18	37.45	14.03	14.03
BL316m3	76.36	69.76	12.08	14.06
BM316m2	45.27	44.25	9.90	14.22
AM414p1	64.05	64.22	13.78	14.26

*Program costs are underwritten by government appropriation.

TABLE 6, Continued

Code Number of Parent Institution	Net Cost per Student-Week		Derived Income per Student-Week	
	To Parent Institution	For Total Program	To Parent Institution	For Total Program
AM316m1	$43.05	$40.78	$13.15	$14.36
CM315o4	38.89	39.08	13.38	14.43
BS315m1	57.32	59.00	14.16	14.58
AL176e1	30.38	30.32	13.85	14.80
BM216e3	56.61	55.27	14.78	14.89
CS115g1	87.66	81.87	13.90	14.97
CS215o1	52.55	50.41	12.85	15.14
CL216m5	60.46	57.52	13.72	15.21
BL416m1	34.70	34.99	14.61	15.28
DM216e1	43.92	43.09	14.65	15.52
AL115m3	37.38	36.44	13.88	15.61
AL413l1	20.91	26.11	14.73	15.63
CL315m1	45.84	43.48	16.18	16.13
AM216e4	57.49	57.49	16.48	16.48
CS216e1	30.78	31.96	15.56	16.50
CL216e3	46.62	45.33	15.63	16.69
CS115o3	60.25	58.18	13.54	16.70
CL115m5	55.69	54.73	16.43	16.77
BL213o1	42.73	44.79	16.66	16.85
AS114o2	65.89	66.52	15.42	17.30
CS115i1	61.46	63.58	15.29	17.35
AL315g1	50.86	50.93	17.37	17.41
CM315o2	36.14	35.18	16.44	17.42
BM115e1	43.62	42.45	15.92	17.50
CM115o2	48.66	47.24	16.66	17.52
CS114o1	80.64	80.35	17.11	17.55
BL216m2	42.04	42.42	14.06	17.62
BL115k1	33.01	32.53	18.28	17.83
BL115m1	44.17	45.65	18.30	18.08
CL215o3	55.21	51.38	14.92	18.14
BM155m1	55.74	57.00	13.73	18.16
BL315o3	55.37	54.81	18.29	18.20
CL115o2	60.09	58.76	18.86	18.38
BM115o3	61.45	61.36	18.58	18.38
CL114k1	36.64	36.74	17.06	18.46
BL316m1	51.71	49.40	18.67	18.55
BL114p1	79.25	81.69	17.70	18.58
BL115k4	40.02	40.02	18.79	18.79
CS115o1	71.26	68.45	16.43	18.94
BM315o5	29.21	30.42	18.65	19.27
DM216o1	55.40	53.42	19.48	19.37
AM416m3	41.63	43.48	20.88	19.39
AM116o1	47.48	46.64	18.19	19.65
AL115k3	32.80	33.39	20.64	19.99
AM216o2	46.15	46.70	20.46	20.00
CL115m2	48.58	48.35	16.80	20.38
CL316o2	41.60	40.98	21.55	20.44
BM115k1	52.39	49.07	18.48	20.56
CS216m1	73.37	61.44	23.34	20.75
CM216m1	39.61	39.82	20.80	21.14
BS125m1	92.16	70.54	14.95	21.45
AM115o5	60.19	57.22	20.72	21.77
AL415g1	49.04	49.09	18.05	22.22
BL115o1	56.60	55.23	18.27	22.23
AL115k6	51.62	50.39	22.64	22.64
BL115m4*	47.08	51.46	21.98	22.99
BM215m1	53.20	48.32	19.84	23.26
CL215m1	36.61	35.96	22.46	23.36

*Modified basis of allocation used in deriving gross cost.

TABLE 6, Continued

Code Number of Parent Institution	Net Cost per Student-Week		Derived Income per Student-Week	
	To Parent Institution	For Total Program	To Parent Institution	For Total Program
BL115k2	$49.03	$46.66	$25.08	$23.72
CM213m1	45.60	47.43	22.61	23.74
AM314m1	47.71	47.71	24.61	24.61
BM215m3	41.58	42.77	26.16	25.07
AL216e1	53.68	53.68	25.92	25.92
AM115a1	45.69	45.85	25.55	26.89
AM214m1	58.77	58.77	29.05	29.05
BM115o8	49.71	51.62	29.33	29.22

GENERAL COMMENTS ON THE COST OF DIPLOMA PROGRAMS IN NURSING

APPLICABILITY OF FINDINGS

The foregoing findings are based upon analyses of the costs of a sample of diploma programs. While the sample was chosen at random among those willing and able to participate, there was no evidence that unwillingness to participate indicated comparatively low or comparatively high costs. When the invitations to participate were distributed, those who decided not to participate could scarcely have had knowledge of comparative costs of diploma programs. Few if any of the parent institutions had done cost analyses of their diploma programs. No data were available that could be used to compare the costs of one program with those of the population of diploma programs.

None of the findings of the study indicated that there was a relationship between the cost of the program and willingness to participate in the study. Contacts with institutions that had originally indicated reluctance to participate gave study staff the impression that the reluctance was associated with apprehension about making the costs of the program known within the parent institution. In the programs studied, there was no obvious relationship between the relative cost of the program and whether or not the participants expressed concern about the cost of the program.

The findings of the present study appear to be the most complete and comprehensive that are available. It cannot be said unequivocally that the findings apply to programs outside the population of those willing to participate in a study of costs. However, it could not be demonstrated that this limitation biased the findings and therefore prejudiced their applicability.

SUMMARY OF PROGRAM COSTS

The following table summarizes the costs to parent institutions. The last two columns of the table show the approximate cost (to the nearest $50) per student per year. A student-year is equivalent to 43 weeks in the parent institution.

Type of Cost	Cost per Student-Week		Approximate Cost per Student-Year	
	Median	Interquartile Range	Median	Interquartile Range
Gross cost				
Educational functions	$23.38	$19.28-$28.03	$1,000	$ 800-$1,200
Noneducational functions	31.30	26.36- 37.04	1,400	1,000- 1,600
Educational functions and noneducational functions	55.68	48.54- 63.52	2,400	2,100- 2,700
Net cost				
Educational functions	19.14	14.90- 23.63	850	600- 1,000
Noneducational functions	28.99	24.90- 36.06	1,300	1,000- 1,500
Educational functions and noneducational functions	50.16	41.62- 57.21	2,150	1,800- 2,500

The following table summarizes the total program costs, that is, the costs to the parent institution plus the costs to its cooperating agencies. In this instance, a student-year is equivalent to 48 weeks.

Type of Cost	Cost per Student-Week		Approximate Cost per Student-Year	
	Median	Interquartile Range	Median	Interquartile Range
Gross cost				
Educational functions	$22.82	$18.59-$27.32	$1,100	$ 900-$1,300
Noneducational functions	31.29	26.34- 36.39	1,500	1,250- 1,750
Educational functions and noneducational functions	54.44	47.76- 62.06	2,600	2,300- 3,000
Net cost				
Educational functions	18.79	14.61- 23.22	900	700- 1,100
Noneducational functions	28.55	25.01- 34.56	1,400	1,200- 1,700
Educational functions and noneducational functions	49.07	42.05- 57.36	2,300	2,000- 2,800

The following table summarizes the estimated value of students' clinical experiences to the parent institution and to the parent institution together with its cooperating agencies.

Institution(s) Participating in the Program	Estimated Value of Students' Clinical Experiences			
	Per Student-Week		Per Student-Year	
	Median	Interquartile Range	Median	Interquartile Range
Parent institution	$13.84	$10.25-$18.21	$600[a]	$400-$800[a]
All institutions	15.32	12.17- 19.46	750[b]	600- 950[b]

a. Based on a student-year of 43 weeks.

b. Based on a student-year of 48 weeks.

Data in the first two of the foregoing tables exemplify the general tendency of institutions to devote a greater portion of expenditures to noneducational functions of the program than to educational functions. Gross noneducational-functions costs were approximately one-third greater than gross educational-functions costs both for the parent institution and for the total program. Net noneducational-functions costs were over 50 percent greater.

As mentioned earlier, net cost is the cost that remains after income intended for either function or both functions of the program has been subtracted. The relatively small portion of income earmarked for noneducational functions may indicate that institutions were unaware of or tended to overlook the relative magnitude of the cost of the maintenance of diploma program students.

According to these data, the typical student in one year of the program incurred the following costs.

To the parent institution:

$1,000 for educational functions.
$1,400 for noneducational functions.

To all institutions:

$1,100 for educational functions.
$1,500 for noneducational functions.

Yearly income per student to defray the cost of the program amounted to:

$150 for educational functions.
$100 for noneducational functions.

The estimated value of the clinical experiences of the student was:

$600 per year in parent institutions.
$750 per year in all institutions.

Many participants in the study expressed the belief that the estimated value of students' clinical experience is only one aspect of the worth of having a diploma program. Additional values that were cited had to do with such intangibles as the value of the program in recruiting nursing service staff and the stimulating effect of the educational program on the total institution.

Two of the findings of the present study can be used as bases for estimating the yearly total program costs for the entire population of diploma programs. They are the median cost per student and the distribution of costs per student (the number of the cases studied that fell in each ten-dollar interval of the range of costs). On the first basis--the median cost per student applied to the population of diploma program students that existed on October 15, 1962--the estimated cost is $250,000,000. The estimated cost of educational functions is $105,000,000 and that of noneducational functions is $145,000,000. When the second basis--distribution of costs--is applied to the population of diploma program students, the resulting estimate is approximately identical with the previous one--none of the three costs estimated by the one method varies as much as 2 percent from the cost estimated by the other method.

OBSERVATIONS ON VARIABLE RELATIONSHIPS

Relationships Pertaining to the Year of the Study

Statistical tests applied to data collected for the study did not show any significant relationships between the year of analysis and the cost of either or both functions of diploma programs. One could ask, Does this mean that the rise in living costs (the consumer price index increased by 4 percent during the study period[1]) had no appreciable effect on the cost of the programs? It can be shown that had diploma program costs increased by 4 percent during the study period, the resulting differences in cost would not have been found to be significant at the .05 level of probability. To demonstrate this, one can number the costs of each program as they are listed on Table 3, increase each even-numbered cost by 4 percent, and test for significant differences between the odd- and even-numbered cases. It will be found that the differences are not significant at the .05 level of probability. However, they will be significant at the .10 level. In the study, the probability of chance variations among the fiscal year subgroups as great as those observed was more than .80. There is reason to suppose that some sort of compensating factor or factors offset the rise in living costs.

In the one instance of a significant relationship between a dependent variable and year of analysis, the variable was not cost but derived income as determined by professional ability-usability estimates. The estimates indicated that over the years of the study, there was a significant decrease in the value of the students' clinical experience to the institution in which the experiences took place. This finding is in line with the belief held by an increasing number of nurse educators that a nursing program is an educational program, not an apprenticeship, that the aims of the program alone should determine the time, the place, and the nature of students' clinical experiences.

Relationships Pertaining to Geographic Region

The finding that diploma programs in NLN Region I (the North Atlantic) spent significantly more per student-week on educational functions than did diploma programs in other regions is in line with statistical reports of regional variations in the cost of public education. During the study period, the 11 units (10 states and the District of Columbia) comprising Region I had significantly greater expenditures per pupil-day for public education in elementary and secondary schools than did the remaining 40 states.[2]

The item that accounted for most of the program's educational-functions cost was instructors' salaries. Salaries of instructors in elementary and secondary public schools were higher in the areas comprising NLN Region I than in the country as a whole.[3] Over 90 percent of the diploma programs in Region I are in states in which the average public school teacher's salary was above the national average. Roughly half of these programs were in states in which the average public school teacher's salary was 15 percent or more above the national average.[4]

---

[1] U. S. Bureau of the Census. Statistical Abstract of the United States: 1962. 83d ed. Washington, D. C., U. S. Government Printing Office, 1962, p. 349.

[2] Ibid., p. 108.

[3] Ibid., p. 127.

[4] Ibid.

Programs in Region I also differed significantly from programs in other NLN regions in that the students' clinical experiences had relatively greater value. The difference occurred in spite of the fact that the median hourly rate of pay for beginning general duty nurses in Region I was less than the national median.[1]

Cooperating agencies in Region II (the Midwest) differed significantly from cooperating agencies in other regions in that they spent less to provide educational and noneducational functions of the courses given. This finding, while statistically significant, appears to be of little importance. For instance, there was not a corresponding difference in expenditures for public education. The median amount of money spent on elementary and secondary public education by the states in Region II was near the median for the country. Also, there was not a corresponding difference in the cost of the two functions to parent institutions.

Parent institutions in Region III differed significantly from parent institutions in other regions in two ways. First, the portion of the cost of the program that was borne by these institutions was greater than that borne by other institutions. Second, the value of students' clinical experiences was less in these institutions than in those in other regions. The first difference might have been a consequence of the fact that farm and factory wages in the three U. S. Census Bureau geographic divisions within NLN Region III were the lowest in the country.[2] That is, in a low-income area, it may be necessary for educational institutions to bear a larger portion of the cost of the program than that borne by such institutions in other regions. Although the second difference was in keeping with the low rates of pay for beginning general duty nurses that prevailed in the area,[3] the difference was probably not a consequence of the rates of pay. It was shown earlier that these rates are not the prime determiners of the value of students' clinical experiences. Rather, the finding that the parent institution bore a relatively large portion of the cost of the program and the finding that students' clinical experiences were of relatively little value tended to occur together. These findings occurred together in two previous instances--when the programs were grouped according to type of control and compared and when programs in Region I were compared with those in all other regions.

The three significant differences between Region IV and all other regions were: (1) cooperating agencies had significantly higher costs for educational functions, (2) cooperating agencies had significantly higher costs for educational and noneducational functions, and (3) parent institutions met a significantly lesser portion of the cost of the diploma program.

It is highly probable that the first finding applies to parent institutions as well as to cooperating agencies. The average rank for Region IV was 9.60 ranks above the average for all regions for educational-functions costs to parent institutions, which was slightly higher than the average for Region I, which in turn was significantly higher than that for all other regions considered as one. Region IV is an area of relatively high income. Nurses' salaries are highest here[4], and factory and farm wage rates are above the national average. If the data pertaining to the costs of educational functions of diploma programs in NLN Regions I and IV were to be combined (there is some justification for this in that costs of public education per pupil-day in these regions are the highest in the country[5]) and compared with educational-functions costs in the remaining regions, the results would show the costs in the combined region were significantly higher than those in the rest of the country. The probability of the occurrence of this difference on the basis of chance alone would be less than .02. (As mentioned earlier, the comparable probability for Region I was less than .04.)

One consequence of the fact that Region IV was a high-income area might have been that the students' parents were able to meet a larger portion of the cost of the program than was met by parents in the other regions. Region IV was outstanding in that it exceeded all other regions in the percent of parent institutions that reported income items pertaining to noneducational functions. A finding cited in the section of this report dealing with income was that institutions reporting such items tended to bear a lesser portion of the cost of the program than was borne by other institutions.

Relationships Pertaining to Type of Control

When relationships between costs and type of control of the institution occurred, they were usually applicable to both parent institutions and cooperating agencies. Costs of educational functions were significantly greater in both parent institutions and cooperating agencies under public control. However, parent institutions under public control differed from cooperating agencies under public control in certain respects. Over half of the former were under the control of a city government, while most of the latter were under the control of a state government. Without exception, participating parent institutions under public control were general hospitals with short-term, acutely ill patients. Most cooperating agencies under public control were psychiatric hospitals with a relatively large census of ambulatory, long-term patients. Therefore, the finding that parent institutions under control of a city government had significantly higher costs for both educational and noneducational functions, which was reported earlier, applies only to general hospitals under public control.

---

1. American Nurses' Association. Facts About Nursing, A Statistical Summary. 1962-1963 ed. New York, the Association, 1963, p. 141.

2. U. S. Bureau of the Census. Op. cit., pp. 234 and 238.

3. American Nurses' Association. Op. cit., p. 141.

4. Ibid.

5. U. S. Bureau of the Census. Op. cit., p. 108.

Noneducational-functions costs in cooperating agencies under public control were slightly less than those in cooperating agencies under private control. The large patient census in such institutions may reduce the unit cost of noneducational functions. This possibility is further supported by the finding that the noneducational-functions costs in agencies offering courses in psychiatric nursing were significantly less than those in agencies offering courses in other clinical areas.

The portion of the cost of the diploma program met by parent institutions under public control was significantly greater than that met by parent institutions under private control. This finding may be related in part to current opinions about who does or should pay for educating the diploma program student. There is an expressed concern about the cost of diploma programs in hospitals under private control that is not applicable to programs in hospitals that are financed by taxation. Hospital administrators are concerned that the unmet cost of nursing education is being passed on to the patient.[1, 2] One administrator warns that if the patients knew "how much they are paying for nursing education . . . the protests against high hospital charges would be even louder than now."[3] A possible explanation for the difference between programs in institutions under public control and in those under private control with respect to costs is that the concern predisposes to economy measures by parent institutions under private control. In addition to the foregoing, one source of income that lessened the percent of program cost met by the parent institution was private gifts to nursing programs. Records of income from all but a few institutions under public control had no entries under the item Private Gifts.

The two subgroups of parent institutions under public control differed from one another in the value of the students' clinical experiences to the institutions in each subgroup. Of all type-of-control subgroups, the subgroup city government was most typical in that it was closest to the median for such values. The subgroup federal, state, and county, which contained only 10 institutions, was far enough below the median value to differ significantly from the remaining 113 institutions. An administrator in one of the institutions under the control of a city government expressed the belief that the number of nursing staff vacancies that existed increased the likelihood that students' educational experiences would be of value to nursing service. However, the present study did not include the investigation of a possible relationship between adequate staffing and the results of professional ability-usability estimates.

The costs of both educational and noneducational functions of the diploma program were significantly lower in parent institutions under private control than in such institutions under public control. This was also true of cooperating agencies under religious control as compared with all other cooperating agencies considered as one subgroup. However, the costs of the two functions were not significantly lower in cooperating agencies under private secular control as compared with all other cooperating agencies considered as one subgroup. Any services donated to cooperating agencies under religious control could not have been reflected in the findings of the study. When services were donated, the prevailing values of the services were imputed.

Parent institutions under religious control differed significantly from those under all other types of control in that they met a lesser portion of the cost of the program. This finding is in keeping with the fact that economy measures were observed much more frequently in institutions under religious control than in institutions under secular control.

Relationships Pertaining to Enrollment Size

The finding that enrollment size was inversely related to educational-functions cost per student was consistent for both parent institutions and cooperating agencies. Persons who reviewed the findings of the study agreed that this relationship was the most impressive finding of the study. However, this does not mean that doubling or tripling the enrollment of a program of small-size enrollment that operated at a deficit would eliminate the deficit. While increasing the enrollment might decrease the financial loss per student, the increased number of students might accumulate a deficit as great as or greater than that which existed previously. The extent of the deficit may not be apparent to the administrator or to the program director whose knowledge of the cost of the program is limited to that of its direct expenses. In most of the cost analyses, direct expenses accounted for the major portion of the cost of educational functions but not for the major portion of the cost of noneducational functions.

The findings of the study did not indicate that measures directed toward economy of general overhead costs can offset the increased educational cost per student that is associated with programs of small enrollment size. When the study programs were subgrouped according to both enrollment size and type of control and compared for differences in the cost of educational functions, the results showed that enrollment size had the greater effect on the cost.

Findings pertaining to cooperating agencies offered further evidence that the cost of educational functions increased as the number of student-weeks spent in an institution or agency decreased. Parent institutions that used three or more cooperating agencies had educational-functions costs that were significantly higher than such costs in institutions that used two or fewer agencies. In some of the programs studied, three 12-week courses were given by cooperating agencies. The total student-weeks accumulated in such programs were about three-fourths of the total accumulated in programs of equal enrollment size that used no coop-

---

[1] William K. Turner. "Must the Patient Pay for Nursing Education?" Hospitals, 35:53-55, Dec. 16, 1961.

[2] Elmer L. Harvey. "Financing Diploma Schools of Nursing." Hospital Management, 92:26-29, Dec., 1961.

[3] Ibid., p. 26.

erating agencies. Cooperating agencies offering courses of one month's duration (communicable disease nursing) had significantly higher educational-functions costs than did cooperating agencies offering courses of three months' duration (psychiatric nursing and nursing of children).

There was no evidence that parent institutions with programs of small enrollment size compensated for the increased cost of educational functions by securing more outside income for the program, nor was the value of students' clinical experiences greater than that for institutions with programs of medium or large enrollment size. The percent of the cost of the program met by parent institutions with programs of small enrollment size was appreciably greater than that met by institutions with programs of other enrollment sizes. The value of students' clinical experiences was significantly lower in hospitals with programs of small enrollment size than it was in hospitals with programs of medium or large enrollment size.

Generally, throughout the analysis of the data, evidence of compensations that could have occurred failed to appear. Data collected in one of the parent institutions could be construed to mean that a variable other than those considered in the study had engendered compensating economies. The institution was the only one for which two cost analyses were done--one at the beginning of the project and one near the end. In the interim period, educational-functions costs of the nursing program had decreased, although many other costs in the institution had increased. At the time of the second analysis, the institution possessed a characteristic that that it did not have when the first analysis took place--for several years it had been aware of the cost of its nursing program.

APPENDIX A

DESCRIPTION OF STATISTICAL METHODS USED IN THE STUDY

The following explanation is intended for readers who are unfamiliar with the statistical methods used in the study. The explanation is based upon an example of imaginary cost data on 10 imaginary diploma programs.

For the sake of exposition, assume that cost analyses of 10 programs, A through J, resulted in the following costs per student-week.

Program	Cost per Student-Week
A	$44
B	28
C	45
D	55
E	80
F	75
G	53
H	31
I	27
J	68

Also assume that 4 of the programs, namely, E, F, G, and J, had small-size enrollments and all other programs had medium- or large-size enrollments. Assume further that the question to be answered by statistical analysis is, Do programs of small-size enrollment differ significantly from all other programs in cost per student-week?

In order to answer the question by means of the method used in the study, it will be necessary to convert the cost data to ranking data, apply statistical tests to the ranking data, and determine whether or not the test results indicate that programs of small-size enrollment differ significantly in cost from programs of other enrollment sizes.

To convert the preceding cost data to ranking data, each program is ranked in order of increasing cost. That is, the program with the lowest cost is ranked 1 and that with the highest cost is ranked 10. In this case, the ranks of the programs are as follows:

Program	Rank
A	4
B	2
C	5
D	7
E	10
F	9
G	6
H	3
I	1
J	8
	Total 55

The average rank per program is then computed. This is done by dividing the sum of the ranks (55) by the number of cases (10). The resultant average is 5.5. Next, the ranks of the 4 programs with small-size enrollments and those of the 6 with other-size enrollments are summed as follows:

Small-Size		Others	
Program	Rank	Program	Rank
E	10	A	4
F	9	B	2
G	6	C	5
J	8	D	7
		H	3
		I	1
Total	33	Total	22

The average rank for small-size programs is obtained by dividing the sum of ranks (33) by the number of cases (4) and is 8.25. This is 2.75 ranks above the average (5.50) for all programs. The average rank for other-size programs is obtained by dividing the sum of ranks (22) by the number of cases (6). The result is 3.67 and is 1.83 ranks below the average for all programs.

The next step is to subject the ranking data to tests of statistical significance and to interpret the results of the tests. In this case, it is obvious that the average rank of the two groups chosen on the basis of enrollment size differ from one another. Is this difference statistically significant? (The term *statistically significant* means that the difference is appreciably greater than would be expected if the 10 ranks were shuffled and a blindfolded person divided them into a group of 4 ranks and a group of 6 ranks. In other words, tests of statistical significance give results in terms of the probability that a difference of a given magnitude would be expected to occur randomly--that is, on the basis of chance alone.) To answer the question, an appropriate test is applied to the ranks of the two groups (the 4 small-size enrollment programs and the 6 other-size programs), the result of which is a .019 probability of chance occurrence. This means that 19/1,000th of the time--or 19 times out of 1,000--differences of this magnitude would have been expected to result from shuffling the ranks and drawing the two groups at random. One would probably round off the fraction and state the result as follows: "The probability is less than 2 times out of 100 that this would occur on the basis of chance." The statement can be expressed in mathematical symbols as: $p < .02$. The symbol p means probability and the symbol $<$ means less than ($>$ means greater than).

In this report, a difference is held to be significant if it could be expected to occur less than 5 times out of 100 on the basis of chance. If the result is $p < .05$ or $p < .01$ or $p < .001$ or any amount less than .05, the finding is held to be of significance. If the result is $p > .05$ or $p > .10$ or $p > .80$ or any amount greater than .05, the finding is not held to be statistically significant.

In the example, the result $p < .02$ indicates that the cost of programs of small-size enrollment differed significantly from the cost of the other programs.

In the study, two statistical tests, the Kruskal-Wallis one-way analysis of variance and the Mann-Whitney *U* test, were used. The first was used when differences among more than two groups were considered. The results were reported as chi-square values and as probabilities. The second test was used when only two groups were involved. The results were reported as standard scores and as probabilities. Further explanations of the statistical tests, of the meaning of standard score and chi-square, and of the rationale for using nonparametric statistics appear in many textbooks dealing with statistics. Persons who have not studied advanced statistics, should find Siegel's *Nonparametric Statistics for the Behavioral Sciences*[1] especially useful.

---

[1] Sidney Siegel. *Nonparametric Statistics for the Behavioral Sciences.* New York, McGraw-Hill, 1956.

APPENDIX B

A SIMPLIFIED EXAMPLE OF THE CLOSE-OUT METHOD OF COST ANALYSIS

The following explanation of the close-out (sometimes called the step-down) method of cost analysis is intended for those who are unfamiliar with cost accounting. The explanation is aimed at developing an appreciation of the method, not a mastery of it. The figures used are purely imaginary and are not based upon data collected in this study.

Assumptions

The simplified example assumes that the following decisions have been made.

1. The cost to be determined is that of a diploma nursing program conducted by a hospital.
2. This cost will include:
    - a. The direct expenses of the nursing program.
    - b. The nursing program's fair share of the cost of overhead.
3. The overhead will consist of the cost of services to the nursing department from the following departments:
    - a. Plant Operation (providing and maintaining such facilities as water, light, and heat).
    - b. Administration (providing over-all administrative activities, including communication service and purchasing).
    - c. Library (providing library service to the students and faculty of the nursing program as well as to the hospital staff).
4. Each department's share of the cost of a service will be based on the percentage of use of the service as shown by the following statistics:
    - a. Plant Operation: The percent of total square footage in the department.
    - b. Administration: The percent of all the direct expenses that were spent in the department.
    - c. Library: The percent of all visits to the library that were made by the department.
5. The department Plant Operation provides services to the greatest number of other departments. The department Administration provides services to the next greatest number of other departments. The department Library provides services to the next greatest number of other departments.

Cost Centers

The cost of the entire institution will be divided among certain departments, or cost centers. That is, total annual operating costs of the institution will be divided among the following five cost centers.

1. Plant Operation
2. Administration
3. Library
4. Nursing Education
5. All Other Departments

Direct Expenses

In the hypothetical example, total direct expenses for the hospital for the year was $1,040,000. The total was divided among the five cost centers as follows:

Item	Cost Centers				
	Plant Operation	Administration	Library	Nursing Education	All Other Departments
Direct Expenses	$160,000	$80,000	$8,000	$48,000	$744,000

Closing Out Cost Centers

The cost analysis consists of distributing the overhead from each of the first three cost centers, Plant Operation, Administration, and Library, so that the total operating cost will be distributed between the last two cost centers, Nursing Education and All Other Departments. In doing this, the cost of each of the first three cost centers will be allocated (apportioned) to each of the remaining two cost centers on the bases outlined in assumption No. 4 on the previous page. When a cost has been allocated completely, it is said to be closed out. The cost centers will be closed out in the order of service to other departments as described in assumption No. 5.

The cost center Operation of Physical Plant will be the first one to be closed out because it provides services to the greatest number of other departments. The procedure for closing out the cost center Plant Operation is as follows:

1. Determine the cost to be allocated. Because this is the first cost center, its cost consists of the direct expenses of $160,000 only.

2. Convert statistical data into percentages of services provided to each department. The percent of Plant Operation cost charged to each succeeding department is based upon measurements of the floor space (square footage) of each department. The area of each department and the percent of total area in each department are as follows:

Department	Area	Percent of Total Area
Administration	4,000 sq. ft.	2.0
Library	1,000 sq. ft.	0.5
Nursing Education	5,000 sq. ft.	2.5
All Other Departments	190,000 sq. ft.	95.0
Total	200,000 sq. ft.	100.0

3. Allocate costs. The above percentages of total area were multiplied by the cost of the cost center Plant Operation. The results are the portions of the Plant Operation cost that will be charged to each department. They are as follows:

Department	Percent of Usage	Apportionment
Administration	2.0	$ 3,200
Library	0.5	800
Nursing Education	2.5	4,000
All Other Departments	95.0	152,000
Total	100.0	160,000

The first line of the above table shows that the Administration Department which used 2 percent of the total area was charged 2 percent of the $160,000 cost of Plant Operation, or was charged $3,200.

4. Record the cost analysis up to this point. At this point, one step (close-out) of the cost analysis can be recorded. The record of the analysis is shown in the following table. In the table, the amount that was closed out is indicated by a double underline ($160,000). The allocations that were made from this cost follow on the same line of the table. The meaning of the last line of the table is: The $160,000 cost of Plant Operation was completely allocated, with $3,200 of it charged to Administration, $800 of it to Library, $4,000 to Nursing Education, and $152,000 to All Other Departments.

Item	Cost Centers				
	Plant Operation	Administration	Library	Nursing Education	All Other Departments
Direct Expenses	$160,000	$80,000	$8,000	$48,000	$744,000
Allocations					
Plant Operation	160,000 (closed out)	3,200	800	4,000	152,000

The procedure for closing out the cost center Administration is as follows:

1. Determine the cost to be allocated. The cost to be allocated consists of the direct expenses recorded in the cost center plus all previously made allocations. Therefore, the Administration costs to be allocated are as follows:

Direct Expenses	$80,000
Plant Operation Allocation	3,200
Total	$83,200

2. Convert statistical data into percentages of services provided to each department. The percent of Administration cost charged to each succeeding department was based upon the portion of total direct expenses that were expended in each department. For each department, direct expenses and the percent of total expenses are as follows:

Department	Direct Expenses	Percent of Total Direct Expenses
Library	$ 8,000	1.0
Nursing Education	48,000	6.0
All Other Departments	744,000	93.0
Total	800,000	100.0

3. Allocate costs. The above percentages of total direct expenses were multiplied by the cost of Administration. The results are the portions of the Administration cost that will be charged to each department. The allocations are as follows:

Department	Percent of Usage	Apportionment
Library	1.0	$ 832
Nursing Education	6.0	4,992
All Other Departments	93.0	77,376
Total	100.0	83,200

4. Record the cost analysis up to this point. The second step of the cost analysis consists of closing out the cost of the cost center Administration and can be recorded as follows:

Item	Cost Centers				
	Plant Operation	Administration	Library	Nursing Education	All Other Departments
Direct Expenses	$160,000	$80,000	$8,000	$48,000	$744,000
Allocations					
Plant Operation	160,000	3,200	800	4,000	152,000
Administration		83,200 (closed out)	832	4,992	77,376

The close out of the item Administration is recorded in the last table on the previous page. The allocations that were made from this cost follow on the same line of the table.

The procedure for closing out the cost center Library is as follows:

1. Determine the cost to be allocated. The Library cost to be allocated consists of the direct expenses recorded under Library plus the two allocations that have been made to that cost center and is as follows:

Direct Expenses	$8,000
Plant Operation Allocation	800
Administration Allocation	832
Total	$9,632

2. Convert statistical data into percentages of services provided to each department. The percent of Library cost charged to each succeeding department was based upon a survey of library usage (visits to the library) made by persons from each dedepartment. Visits made by each department and the percent of total visits are as follows:

Department	Number of Visits	Percent of All Visits
Nursing Education	1,500	75.0
All Other Departments	500	25.0
Total	2,000	100.0

3. Allocate costs. The above percentages of usage of the library were multiplied by the cost of the library. The results were the portion of Library cost to be charged to the two remaining cost centers. The results were as follows:

Department	Percent of Usage	Apportionment
Nursing Education	75.0	$7,224
All Other Departments	25.0	2,408
Total	100.0	9,632

4. Complete the record of the cost analysis. We have now distributed the overhead from each of the first three cost centers to the last two cost centers. The analysis is complete. It can be shown as follows:

Item	Cost Centers				
	Plant Operation	Administration	Library	Nursing Education	All Other Departments
Direct Expenses	$160,000	$80,000	$8,000	$48,000	$744,000
Allocations					
Plant Operation	160,000	3,200	800	4,000	152,000
Administration		83,200	832	4,992	77,376
Library			9,632	7,224	2,408
Unallocated Charges				64,216	975,784

The total cost of the cost centers Nursing Education and All Other Departments now account for the $1,040,000 that was the hospital's operating cost for the year.

The foregoing example follows the procedures used in the cost analyses done for the study but differs from them in having relatively few cost centers and therefore relatively few close-out steps.

Persons who were asked to read a preview form of the example said that it helped them to understand the records of an actual cost analysis. If the reader wishes to test his knowledge in this way, he can use the records of the cost analysis that are included in the report. The schedules used to record the steps of the analysis are in Appendix C. A record of a summary of these steps appears at the end of the section on methods used in the study.

APPENDIX C

SCHEDULES USED TO RECORD COST ANALYSIS

The 28 schedules contained in this appendix illustrate the steps in the cost analysis method used in the study. Data pertaining to one of the participants have been recorded on the appropriate schedules. Schedules on which no data appear were not used in the analysis of this participant's costs.

The participating parent institution was a 369-bed general hospital under religious control with an average daily census of 265 patients. It was located in the largest of three cities (population over 100,000) in a U. S. Census Bureau standard metropolitan area. There were eight other diploma programs in hospitals in the metropolitan area.

The hospital did not participate in any way in any other program in nursing education.

The hospital's school of nursing had been in existence for over 50 years. The program included 1,409 hours of classroom instruction. Of these, 728 hours (51.7 percent) were spent in nursing courses given in the parent institution. The remainder of the curriculum consisted of 550 hours (39.0 percent) of instruction by contractual arrangement with a college and 131 hours (9.3 percent) in hospitals that were cooperating agencies. The college used for part of the curriculum was located in an adjoining town in the same metropolitan area. The college provided courses in English, anatomy and physiology, microbiology, chemistry, nutrition, psychology, and sociology. The college received $300 of the $350 tuition that each student was charged for the first year of the program. There were two cooperating agencies. One of these, a state mental hospital, provided a 12-week course with 110 hours of instruction in psychiatric nursing. The other, a municipal hospital, provided a 4-week course with 21 hours of instruction in outpatient nursing.

At the time the data were collected, 154 students were enrolled in the program. Sixty were first-year students, 54 were second-year students, and 40 were third-year students. There were 4 weeks of vacation each year. A total of 7,392 student-weeks were accumulated during the year, of which 6,600 (89.3 percent) were spent in the parent institution. On an average, each student spent 42.9 weeks in the parent institution.

The parent institution employed 11 full-time faculty members (including the director) with a bachelors degree in nursing and 1 full-time faculty member holding a diploma. This provided 1 faculty member for every 12.8 students. The remaining school staff consisted of a secretary, a clerk, and a part-time librarian.

Students in the program were eligible for health service in a combined student and hospital personnel health service. The student residence was used exclusively for diploma program students. The hospital maintained a library for the exclusive use of diploma program students.

According to the results of the cost analysis of this institution, 67.1 percent of the cost of educational functions was accounted for by direct and indirect expenditures for instructional personnel. The total direct expenditures for educational functions accounted for 71.4 percent of the total cost of these functions.

Direct expenses accounted for 5.2 percent of the cost of noneducational functions. The bulk (89.3 percent) of this cost center came from allocations for the cost of room and board. It cost $93,909 to maintain the residence and $105,155 to provide dietary service to students in the program. During the year following that in which the cost analysis was completed, the hospital instituted charges of $1,423 for room and board for the three years of the program. Assuming an enrollment identical to that during the year of study, the income would have increased 240 percent over what it was during the previous year and the rate of income per student would have tripled. The percent of the cost of the program borne by the parent institution, which was 91.7 percent when the program was studied, would have decreased to 71.8 percent.

The following table shows certain items of cost or value to the parent institution by cost or value per student-week and by percentile rank of the parent institution among the institutions studied.

Item	Cost or Value per Student-Week	Percentile Rank of Institution
Gross total cost	$55.47	48th
Gross educational-functions cost	22.08	42nd
Gross noneducational-functions cost	33.30	54th
Net total cost	50.77	54th
Net educational-functions cost	17.71	42nd
Net noneducational-functions cost	33.06	60th
Professional ability-usability value	8.45	17th

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7A - COST CENTER - STAFF BENEFITS

DIRECT EXPENDITURES FOR STAFF BENEFITS

TYPE OF BENEFIT	ACTUAL	IMPUTED*	TOTAL
Social Security taxes - hospital share	$ 70,185		$ 70,185
Pension	935		935
Health insurance	40,208		40,208
Workmen's Compensation insurance	22,268		22,268
TOTAL TO BE ALLOCATED			$ 133,596

*If expenditure is made by an outside agency or governing body, please indicate. If this is not an actual expenditure, but an estimated expense, please indicate basis of determination.

Please indicate (*) staff benefits shown in the direct expenses of any of the following cost centers.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7A-1 - STAFF BENEFITS
APPORTIONMENT BASED ON DISTRIBUTION OF SALARIES AND WAGES

Total Expenses - Staff Benefits $ 133,596

COST CENTER	ALL SALARIES AND WAGES AMOUNT	ALL SALARIES AND WAGES PERCENTAGE DISTRIBUTION	APPORTIONMENT
Health Service	$ 2,130	% .08	$ 107
Operation of Physical Plant	88,102	3.46	4,622
Administration and General Expense	196,915	7.74	10,340
Laundry	92,597	3.64	4,863
Housekeeping	183,232	7.20	9,619
Dietary	251,058	9.88	13,199
Employee and Student Residence			
Library			
Maintenance of The Religious			
Nursing Education Non-educational Functions	10,052	.40	534
Educational Functions	76,138	2.99	3,995
All Other Hospital Functions	1,643,231	64.61	86,317
TOTALS	$2,543,455	100.00%	$ 133,596

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7B - COST CENTER - HEALTH SERVICES

DIRECT EXPENDITURES FOR HEALTH SERVICES

TYPE OF EXPENSE	AMOUNT ACTUAL	 IMPUTED	 TOTAL
Salaries and Wages:	$	$	$
Physicians	21	1,700	1,721
Professional nurses	2,109		2,109
Nonprofessional nurse personnel			
Clerical personnel			
Other (specify)			
Subtotal - Salaries and Wages	$ 2,130	$ 1,700	$ 3,829
Supplies and Expenses:			
Supplies	23		23
Laboratory tests	3,405		3,405
X-rays	598		598
Medications	1,707		1,707
Hospital care			
Other (specify)			
Subtotal - Supplies and Expenses	$ 5,733	$	$ 5,733
TOTAL	$ 7,863	$ 1,700	$ 9,563
Depreciation of equipment			$
or Purchase of equipment from current operating funds			$
	TOTAL TO BE ALLOCATED		$ 9,563

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7B-1 - HEALTH SERVICES - APPORTIONMENT BASED ON

Direct Expenses - Health Service	$ 9,563
Charges Allocated to Health Services Staff Benefits (from Schedule 7A)	$ 107
Total Expenses - Health Service	$ 9,670

COST CENTER	AVERAGE NO. EMPLOYEES	WEIGHTED*	PERCENTAGE DISTRIBUTION	APPORTIONMENT
Operation of Physical Plant	14	14	% .85	$ 82
Administration and General Expense	49	49	2.96	286
Laundry	29	29	1.75	169
Housekeeping	51	51	3.08	298
Dietary	119	119	7.20	696
Employee and Student Nurse Residence				
Library				
Maintenance of The Religious				
Nursing Education (Student Nurses)	154	1,049	63.42	6,133
Non-educational Functions	2	2	.12	12
Educational Functions (Instructors)	14	14	.85	82
All Other Hospital Functions	327	327	19.77	1,912
TOTALS		1,654	100.00%	$ 9,670

*Indicate basis for determining apportionment.

Weighting based on percent of visits by student nurses and employees:

Student visits	63.42%
Employee visits	36.58%
	100.00%

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7C - COST CENTER - OPERATION OF PHYSICAL PLANT

DIRECT EXPENDITURES FOR OPERATION OF PHYSICAL PLANT

TYPE OF EXPENSE*	SALARIES AND WAGES			SUPPLIES & EXPENSE**	TOTAL
	ACTUAL	IMPUTED	TOTAL		
Supervisory salaries	$ 7,439	$	$ 7,439	$	$ 7,439
Other salaries	88,614		88,614		88,614
Direct supplies - fuel				40,240	40,240
Other supplies				15,524	15,524
Unclassified				235	235
Purchased services: Electricity				55,574	55,574
Water and sewage				18,110	18,110
Gas				602	602
Elevator maintenance				10,024	10,024
Preventive maintenance				6,456	6,456
Miscellaneous				2,309	2,309
Equipment repairs				7,942	7,942
Services sold to other institution	(7,951)		(7,951)	(16,514)	(24,465)
Fire and boiler and mach. ins.				4,498	4,498
SUBTOTAL	$ 88,102	$	$ 88,102	$ 145,000	$ 233,102
Depreciation of equipment					$ 81,648
or Purchase of equipment from current operating funds					$
TOTAL TO BE ALLOCATED					$ 314,750

---

*List general categories.

**If heat, utilities, insurance, etc., are provided or paid by an outside agency, please show an imputed cost.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7C-1 - OPERATION OF PHYSICAL PLANT - APPORTIONMENT BASED ON AREA

Direct Expenses - Operation of Physical Plant (from Schedule 7C)	$ 314,750
Charges Allocated to Operation of Physical Plant from	
Staff Benefits	$ 4,622
Health Services	$ 82
Total Expenses - Operation of Physical Plant	$ 319,454

APPORTIONMENT BASED ON SQUARE FOOT AREA

COST CENTER	AREA (SQUARE FEET)	PERCENTAGE DISTRIBUTION	APPORTIONMENT
Administration and General Expense	8,390	3.09 %	$ 9,871
Laundry	9,927	3.65	11,660
Housekeeping	825	.30	958
Dietary	7,435	2.74	8,753
Employee and Student Nurse Residence	39,424	14.50	46,321
Library			
Maintenance of The Religious			
Nursing Education			
Non-educational Functions	3,214	1.18	3,770
Educational Functions	11,099	4.08	13,034
All Other Hospital Functions	191,488	70.46	225,087
TOTALS	271,802	100.00%	$ 319,454

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7D - COST CENTER - ADMINISTRATION AND GENERAL EXPENSE

DIRECT EXPENDITURES FOR ADMINISTRATION AND GENERAL EXPENSE

TYPE OF EXPENSE*	SALARIES AND WAGES			SUPPLIES & EXPENSE	TOTAL
	ACTUAL	IMPUTED	TOTAL		
Supervisory salaries	$ 98,420	$	$ 98,420	$	$ 98,420
Other salaries	98,495		98,495		98,495
Supplies				24,262	24,262
Unclassified				14,456	14,456
Interest expense				81,373	81,373
Trustee and underwriter's fees				7,969	7,969
Real estate rental and taxes				3,000	3,000
Purchased services				11,673	11,673
Out-of-town travel				2,547	2,547
Equipment repairs				267	267
Other insurance				10,316	10,316
Professional services				13,318	13,318
Administrative income from other institution				(17,187)	(17,187)
Collection expense				6,208	6,208
Telephone and telegraph				39,067	39,067
SUBTOTAL	$ 196,915	$	$ 196,915	$ 197,269	$ 394,184
Depreciation of equipment					$
or Purchase of equipment from current operating funds					$
				TOTAL TO BE ALLOCATED	$ 394,184

*List general categories.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7D-1 - ADMINISTRATION AND GENERAL EXPENSE APPORTIONMENT BASED ON ALL DIRECT EXPENSES

Direct Expenses - Administration and General Expense (from Schedule 7D)	$ 394,184
Charges Allocated to Administration and General Expense from	
Staff Benefits	$ 10,340
Health Services	$ 286
Operation of Physical Plant	$ 9,871
Total Expenses - Administration and General Expense	$ 414,681

APPORTIONMENT BASED ON ALL DIRECT EXPENSES

COST CENTER	ALL DIRECT EXPENSES		APPORTIONMENT
	AMOUNT	PERCENTAGE DISTRIBUTION	
Laundry	$ 102,904	% 3.28	$ 13,602
Housekeeping	207,934	6.63	27,493
Dietary	452,587	14.43	59,838
Employee and Student Nurse Residence	688	.02	83
Library			
Maintenance of The Religious			
Nursing Education Non-educational Functions	11,567	.37	1,534
Educational Functions	104,076	3.31	13,726
All Other Hospital Functions	2,257,709	71.96	298,405
TOTALS	$ 3,137,465	100.00%	$ 414,681

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7E - COST CENTER - LAUNDRY

		AMOUNT
1. **DIRECT EXPENDITURES**		
Actual salaries and wages	$ 92,597	
Imputed salaries and wages		
Total salaries and wages		$ 92,597
Supplies and expense		10,307
Depreciation of (or capital expenditures made from current operating funds for) equipment used for laundry		
Other (specify)		
TOTAL DIRECT EXPENDITURES FOR LAUNDRY		$ 102,904
* 2. CHARGES ALLOCATED TO LAUNDRY:		
Staff benefits		4,863
Health services		169
Operation of physical plant		11,660
Administration and general expense		13,602
TOTAL EXPENDITURES FOR LAUNDRY - TO BE ALLOCATED		$ 133,198

*These charges will be recorded by the NLN staff.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7E-1 - COST CENTER - LAUNDRY

APPORTIONMENT - OPTION A - DIVISION OF LAUNDRY SERVICES ON TIME BASIS

TYPE OF SERVICE	MAN-HOUR PER WEEK NUMBER	MAN-HOUR PER WEEK PERCENTAGE DISTRIBUTION	VALUE OF SERVICES
General laundry	806	94.38%	$ 125,712
Uniforms	48	5.62	7,486
TOTALS	854	100.00%	$ 133,198

OPTION A - ON POUNDAGE BASIS (GENERAL LAUNDRY)

COST CENTER	POUNDS NUMBER	POUNDS PERCENTAGE DISTRIBUTION	APPORTIONMENT
Housekeeping		%	$
Dietary			
Employee and student nurses residence	531	1.19	1,496
Maintenance of The Religious			
Non-educational functions) Nursing			
Educational functions) Education			
All other hospital functions	44,234	98.81	124,216
TOTAL (GENERAL LAUNDRY)	44,765	100.00%	$ 125,712

OPTION A - ON PIECE BASIS (UNIFORMS)

COST CENTER	PIECE COUNT	PIECE COUNT PERCENTAGE DISTRIBUTION	APPORTIONMENT
Housekeeping		%	$
Dietary			
Employee and student nurses residence			
Maintenance of The Religious			
Non-educational functions) Nursing	606	57.12	4,276
Educational functions) Education			
All other hospital functions	455	42.88	3,210
TOTAL (UNIFORMS)	1,061	100.00%	$ 7,486

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7E-1 - COST CENTER - LAUNDRY (CONTD.)

OPTION A - SUMMARY - APPORTIONMENT OF LAUNDRY SERVICES - ON TIME BASIS (CONCLUDED)

COST CENTER	VALUE OF SERVICES GENERAL LAUNDRY	VALUE OF SERVICES UNIFORMS	TOTAL
Housekeeping	$	$	$
Dietary			
Employee and student nurses residence	1,496		1,496
Maintenance of The Religious			
Non-educational functions) Nursing		4,276	4,276
Educational functions) Education			
All other hospital functions	124,216	3,210	127,426
TOTALS	$ 125,712	$ 7,486	$ 133,198

OPTION B - APPORTIONMENT OF LAUNDRY SERVICES ON PIECE COUNT BASIS

COST CENTER	PIECES GENERAL: LAUNDRY	PIECES UNIFORMS	PIECES WEIGHTED: UNIFORM COUNT	PIECES TOTAL	PERCENTAGE DISTRIBUTION	APPORTIONMENT
Housekeeping					%	$
Dietary						
Employee and student nurses residence						
Maintenance of The Religious						
Non-educational) functions)Nursing						
Educational)Education functions)						
All other hospital functions						
TOTALS					100.00%	$

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7F - COST CENTER - HOUSEKEEPING

TOTAL DIRECT EXPENDITURES FOR HOUSEKEEPING

TYPE OF EXPENSE*	SALARIES AND WAGES ACTUAL	SALARIES AND WAGES IMPUTED	SALARIES AND WAGES TOTAL	SUPPLIES & EXPENSE	TOTAL
Supervisory salaries	$ 14,374	$	$ 14,374	$	$ 14,374
Other salaries	168,858		168,858		168,858
Supplies				22,448	22,448
Purchased services and miscellaneous				1,578	1,578
Equipment repairs				676	676
SUBTOTAL	183,232		183,232	24,702	$ 207,934
Depreciation of equipment					$
or Purchase of equipment from current operating funds					$
				TOTAL TO BE ALLOCATED	$ 207,934

*List general categories.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7F-1 - HOUSEKEEPING
APPORTIONMENT ON BASIS OF AREA WEIGHTED FOR USAGE

Direct Expenses - Housekeeping	$ 207,934
Charges Allocated to Housekeeping from	
Staff Benefits	$ 9,619
Health Services	$ 298
Operation of Physical Plant	$ 958
Administration and General Expense	$ 27,493
Laundry	$
Total Expenses for Housekeeping - TO BE ALLOCATED	$ 246,302

COST CENTER	AREA		APPORTIONMENT
	SQUARE FEET*	PERCENTAGE	
Dietary	7,435	% 2.94	$ 7,241
Employee and Student Nurse Residence	39,424	15.60	38,423
Library			
Maintenance of The Religious			
Nursing Education Non-educational Functions	3,214	1.27	3,128
Educational Functions	11,099	4.39	10,813
All Other Hospital Functions	191,488	75.80	186,697
TOTALS	252,660	100.00%	$ 246,302

*Use only area serviced by personnel in the housekeeping department. See areas recorded in red in summary of square foot area.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7G - COST CENTER - DIETARY

TOTAL DIRECT EXPENDITURES FOR DIETARY

TYPE OF EXPENSE*	SALARIES AND WAGES			SUPPLIES & EXPENSE**	TOTAL
	ACTUAL	IMPUTED	TOTAL		
Supervisory salaries	$ 31,930	$	$ 31,930	$	$ 31,930
Other salaries	219,128		219,128		219,128
Direct supplies: Bread				10,679	10,679
Butter				14,119	14,119
Groceries				73,250	73,250
Meat				55,918	55,918
Milk				25,268	25,268
Other supplies				19,356	19,356
Unclassified				424	424
Purchased services and miscellaneous				1,487	1,487
Equipment repairs				1,028	1,028
SUBTOTAL	$ 251,058	$	$ 251,058	$ 201,529	$ 452,587
Depreciation of equipment					$
or Purchase of equipment from current operating funds					$
				TOTAL TO BE ALLOCATED	$ 452,587

*List general categories.

**Under supplies and expense include the value of foodstuffs donated or produced on hospital's farm, at fair market value.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7G-1 - APPORTIONMENT OF DIETARY COSTS ON BASIS OF MEALS SERVED

Direct Expenses - Dietary	$ 452,587
Charges Allocated to Dietary from	
Staff Benefits	$ 13,199
Health Services	$ 696
Operation of the Physical Plant	$ 8,753
Administration and General Expense	$ 59,838
Laundry	$
Housekeeping	$ 7,241
Total Expenses for Dietary - TO BE ALLOCATED	$ 542,314

COST CENTER	MEALS SERVED	PERCENTAGE DISTRIBUTION	APPORTIONMENT
		%	$
Employee and Student Nurse Residence			
Library			
Maintenance of The Religious			
Nursing Education Non-educational Functions	89,324	19.39	105,155
Educational Functions			
All Other Hospital Functions	371,283	80.61	437,159
TOTALS	460,607	100.00%	$ 542,314

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7H - COST CENTER - EMPLOYEE AND STUDENT NURSE RESIDENCE

DIRECT EXPENDITURES FOR EMPLOYEE AND STUDENT NURSE RESIDENCE

TYPE OF EXPENSE*	SALARIES AND WAGES**			SUPPLIES & EXPENSE	TOTAL
	ACTUAL	IMPUTED	TOTAL		
Linen replacement	$	$	$	$ 688	$ 688
SUBTOTAL	$	$	$	$ 688	$ 688
Depreciation of equipment					$
or					
Purchase of equipment from current operating funds					$
				TOTAL TO BE ALLOCATED	$ 688

*Please list general categories.

**Salaries of housemothers should be listed in the direct expenditures of Non-educational Functions, unless the residence is used exclusively for the school of nursing.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7H-1 - APPORTIONMENT OF COSTS FOR EMPLOYEE AND STUDENT NURSE RESIDENCE BASED ON:

Direct Expenses - Residence	$ 688
Charges Allocated to Employee and Student Nurse Residence from	
Staff Benefits	$
Health Services	$
Operation of Physical Plant	$ 46,321
Administration and General Expense	$ 83
Laundry	$ 1,496
Housekeeping	$ 38,423
Dietary	$
Total Expenses - Residence	$ 87,011

COST CENTERS		PERCENTAGE DISTRIBUTION	APPORTIONMENT
Library	*	%	$
Maintenance of The Religious			
Nursing Education Non-educational Functions		100.00	87,011
Educational Functions			
All Other Hospital Functions			
TOTALS		100.00%	$ 87,011

*Indicate basis of apportionment.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7I - COST CENTER - LIBRARY* OMIT

TYPE OF EXPENSE	AMOUNT
Salaries - actual $	
- imputed $	
Total	$
Supplies	
Books	
Subscriptions	
Binding	
Library supplies	
Other**	
SUBTOTAL	$
Depreciation of equipment	$
or	
Purchase of equipment from current operating funds	$
TOTAL	$

*If nursing students' use of the library is negligible and no allocation is to be made to nursing education, hospital library costs may be recorded in the cost center, All Other Hospital Functions.

**Please specify.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7I-1 - DISTRIBUTION OF COSTS OF LIBRARY ON THE BASIS: OMIT

Direct Expenses - Library (from Schedule 7I) $________

Charges Allocated to the Library from:
Staff Benefits $________
Health Services $________
Operation of the Physical Plant $________
Administration and General Expense $________
Laundry $________
Housekeeping $________
Dietary $________

Total Expenses - Library $________

COST CENTERS		PERCENTAGE DISTRIBUTION	APPORTIONMENT
Educational Functions	*	%	$
All Other Hospital Functions			
TOTAL		100.00%	$

*Indicate basis of apportionment.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7J - COST CENTER - MAINTENANCE OF THE RELIGIOUS OMIT

DIRECT EXPENDITURES - MAINTENANCE OF THE RELIGIOUS

TYPE OF EXPENSE*	SALARIES AND WAGES			SUPPLIES & EXPENSE	TOTAL
	ACTUAL	IMPUTED	TOTAL		
	$	$	$	$	$
SUBTOTAL	$	$	$	$	$
Depreciation of equipment					$
or Purchase of equipment from current operating funds					$
TOTAL - NOT ALLOCATED					$

*List by general category.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7J-1 - MAINTENANCE OF THE RELIGIOUS

OMIT

Direct Expenses - Maintenance of The Religious $________

Charges Allocated to Maintenance of The Religious from
- Staff Benefits $________
- Health Services $________
- Operation of Physical Plant $________
- Administration and General Expense $________
- Laundry $________
- Housekeeping $________
- Dietary $________

Total Expenses - Maintenance of The Religious - NOT TO BE ALLOCATED $________

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7K - COST CENTER - NURSING EDUCATION - NON-EDUCATIONAL FUNCTIONS

DIRECT EXPENDITURES - NON-EDUCATIONAL FUNCTIONS

TYPE OF EXPENSE	AMOUNT		
	ACTUAL	IMPUTED	TOTAL
Salaries and Wages:	$	$	$
Housemother	6,873		6,873
Social director			
*Health service personnel:			
Physician(s)			
Professional nurse(s)			
Nonprofessional nurse personnel			
Clerical personnel			
Other (specify) Receptionist	3,179		3,179
Subtotal - Salaries and Wages	$ 10,052	$	$ 10,052
Supplies and Expenses:			
Recreational program	769		769
Transportation of students	56		56
*Health program:			
Laboratory tests			
X-rays			
Medications			
Hospital care			
Other (specify)			
Chorus	690		690
Subtotal - Supplies and Expenses	$ 1,515	$	$ 1,515
TOTAL	$ 11,567	$	$ 11,567
Depreciation of equipment			$
or			
Purchase of equipment from current operating funds			$
TOTAL NOT TO BE ALLOCATED			$ 11,567

*Health service costs not allocated from Health Service cost center.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7K-1 - NURSING EDUCATION - NON-EDUCATIONAL FUNCTIONS
DISTRIBUTION OF COSTS BETWEEN PROGRAMS BASED ON WEEKS OF RESIDENCE

Direct Costs - Non-educational Functions (Schedule 7K)	$ 11,567
Charges Allocated to Non-educational Functions from	
Staff Benefits	$ 534
Health Services	$ 6,145
Operation of Physical Plant	$ 3,770
Administration and General Expense	$ 1,534
Laundry	$ 4,276
Housekeeping	$ 3,128
Dietary	$ 105,155
Employee and Student Nurse Residence	$ 87,011
Total Costs - Non-educational Functions	$ 223,120

TYPE OF PROGRAM	WEEKS IN RESIDENCE	PERCENTAGE DISTRIBUTION	APPORTIONMENT
Diploma Program		% 100.00	$ 223,120
Affiliate Program			
TOTAL		100.00%	$ 223,120

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7L - COST CENTER - NURSING EDUCATION - EDUCATIONAL FUNCTIONS

DIRECT EXPENDITURES - EDUCATIONAL FUNCTIONS*

TYPE OF EXPENSE	AMOUNT		
	ACTUAL	IMPUTED	TOTAL
Salaries and Wages:	$	$	$
Administrative	7,324		7,324
Instructional	57,771		57,771
Counselors			
Librarians	1,593		1,593
Secretarial and clerical	7,818		7,818
Other (specify) Recruitment	1,632		1,632
Subtotal - Salaries and Wages	$ 76,138	$	$ 76,138
Supplies and Expenses:			
Fees paid to colleges	17,400		17,400
Fees paid to affiliation			
Textbooks			
Uniforms			
Office supplies	624		624
Library expenses:			
Books			
Subscriptions			
Library supplies			
Other			
Other (specify) *	9,695		9,695
Subtotal - Supplies and Expenses	$ 27,719	$	$ 27,719
TOTAL	$ 103,857	$	$ 103,857
Transfer from All Other Hospital Functions			$ 219
			$
TOTAL NOT TO BE ALLOCATED			$ 104,076

*Includes student nurses' library.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7L-1 - NURSING EDUCATION - EDUCATIONAL FUNCTIONS
(ACCUMULATION OF TOTAL COSTS WITH DISTRIBUTION TO DIFFERENT PROGRAMS, IF NECESSARY)

Direct Expenses - Educational Functions (Schedule 7L)	$ 104,076
Charges Allocated to Educational Functions from	
Staff Benefits	$ 3,995
Health Services	$ 82
Operation of Physical Plant	$ 13,034
Administration and General Expense	$ 13,726
Laundry	$
Housekeeping	$ 10,813
Dietary	$
Employee and Student Nurse Residence	$
Library	$
Total Expenses for Educational Functions	$ 145,726

To be allocated to different types of educational programs in nursing, if more than one type of program is offered.

TYPE OF PROGRAM	COURSES GIVEN TO AFFILIATES			REST OF EDUCATIONAL PROGRAM	TOTAL APPORTIONMENT
Diploma Program	$	$	$	$	$ 145,726
Affiliate Program					
*Graduate Nurse					
TOTALS	$	$	$	$	$ 145,726

*Use only if educational program is organized under the department of nursing education. Generally, costs for the staff education program in the department of nursing will be in the cost center, All Other Hospital Functions.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7M - COST CENTER - ALL OTHER HOSPITAL FUNCTIONS

DIRECT EXPENSES - ALL OTHER HOSPITAL FUNCTIONS*

TYPE OF EXPENSE	SALARIES AND WAGES			SUPPLIES & EXPENSE	TOTAL
	ACTUAL	IMPUTED	TOTAL		
All other	$ 1,643,231	$	$ 1,643,231	$	$ 1,643,231
All other				614,697	614,697
SUBTOTAL	$ 1,643,231	$	$ 1,643,231	$ 614,697	$ 2,257,928
Transfer to Educational Functions					$ (219)
TOTAL NOT TO BE ALLOCATED					$ 2,257,709

*Include costs of inservice training programs (including volunteers), practical nurse and aide instruction, and resident and intern program.

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7M-1 - ALL OTHER HOSPITAL FUNCTIONS

Direct Expenses - All Other Hospital Functions	$ 2,257,709
Charges Allocated to All Other Hospital Functions from	
Staff Benefits	$ 86,317
Health Services	$ 1,912
Operation of Physical Plant	$ 225,087
Administration and General Expense	$ 298,405
Laundry	$ 127,426
Housekeeping	$ 186,697
Dietary	$ 437,159
Employee and Student Nurse Residence	$
Library	$
Total Expenses - All Other Hospital Functions - NOT TO BE ALLOCATED	$ 3,620,712

COST ANALYSIS OF ONE PARTICIPATING INSTITUTION

FISCAL YEAR BEGINNING January 1, 1961 ENDING December 31, 1961

SCHEDULE 7N - USE VALUE OF BUILDINGS

Insured Value of All Buildings $__________

or

Cost Value of All Buildings $ 6,552,355 at 2½% = $163,809
Use Value of Buildings

APPENDIX D

PARTICIPATING INSTITUTIONS

Schools of Nursing

Alabama
- Birmingham Baptist Hospital School of Nursing
  Birmingham
- Mobile Infirmary School of Nursing
  Mobile
- Providence School of Nursing
  Mobile
- St. Vincent School of Nursing
  Birmingham
- Sylacauga Hospital School of Nursing
  Sylacauga

Arizona
- St. Mary's School of Nursing
  Tucson

Arkansas
- Sparks Memorial Hospital School of Nursing
  Fort Smith

California
- Highland School of Nursing
  Oakland
- Los Angeles County General Hospital School of Nursing
  Los Angeles
- Queen of Angels School of Nursing
  Los Angeles
- Samuel Merritt Hospital School of Nursing
  Oakland
- San Joaquin General Hospital School of Nursing
  Stockton

Colorado
- St. Mary-Corwin Hospital School of Nursing
  Pueblo

Connecticut
- Danbury Hospital School of Nursing
  Danbury
- Grace-New Haven School of Nursing
  New Haven

Delaware
- Delaware Hospital School of Nursing
  Wilmington

District of Columbia
- Capital City School of Nursing
- Freedmen's Hospital School of Nursing
- Washington Hospital Center School of Nursing

Florida
- St. Vincent's Hospital School of Nursing
  Jacksonville

Georgia
- Crawford W. Long Memorial Hospital School of Nursing
  Atlanta
- St. Joseph's Infirmary School of Nursing
  Atlanta

Illinois
- Grant Hospital School of Nursing
  Chicago
- Presbyterian-St. Luke's Hospital School of Nursing
  Chicago

Indiana
- Methodist Hospital of Indiana School of Nursing
  Indianapolis
- St. Margaret Hospital School of Nursing
  Hammond
- St. Vincent's School of Nursing
  Indianapolis
- Union Hospital School of Nursing
  Terre Haute

Iowa
- Broadlawns Polk County Hospital School of Nursing
  Des Moines
- Mercy Hospital School of Nursing
  Council Bluffs
- Mercy Hospital School of Nursing
  Des Moines
- St. Luke's Hospital School of Nursing
  Davenport

Kansas
- St. Francis Hospital School of Nursing
  Wichita
- Wesley Medical Center School of Nursing
  Wichita

Kentucky
- Kentucky Baptist Hospital School of Nursing
  Louisville
- Louisville General Hospital School of Nursing
  Louisville
- Norton Memorial Infirmary School of Nursing
  Louisville

Louisiana
- Charity Hospital School of Nursing
  New Orleans
- Hotel Dieu School of Nursing
  New Orleans

Maine
- Maine Medical Center School of Nursing
  Portland

Schools of Nursing, Continued

Maryland

Johns Hopkins Hospital School of Nursing
  Baltimore
Maryland General Hospital School of Nursing
  Baltimore

Massachusetts

Beverly Hospital School of Nursing
  Beverly
Catherine Laboure School of Nursing
  Boston
The Children's Hospital School of Nursing
  Boston
Henry W. Bishop, 3rd, Memorial School of Nursing
  Pittsfield
Malden Hospital School of Nursing
  Malden
Massachusetts General Hospital School of Nursing
  Boston
McLean Hospital School of Nursing
  Belmont
Peter Bent Brigham Hospital School of Nursing
  Boston
Quincy City Hospital School of Nursing
  Quincy
Sturdy Memorial Hospital School of Nursing
  Attleboro
Worcester City Hospital School of Nursing
  Worcester
Worcester Hahnemann Hospital School of Nursing
  Worcester

Michigan

W. A. Foote Memorial Hospital School of Nursing
  Jackson

Minnesota

St. Barnabas Hospital School of Nursing
  Minneapolis
St. Luke's Hospital School of Nursing
  Duluth

Mississippi

Gilfoy School of Nursing of the Mississippi Baptist Hospital
  Jackson
Mercy Hospital-Street Memorial School of Nursing
  Vicksburg

Missouri

Barnes Hospital School of Nursing
  St. Louis
Burge-Protestant Hospital School of Nursing
  Springfield
Independence Sanitarium and Hospital School of Nursing
  Independence
The Jewish Hospital School of Nursing
  St. Louis
Research Hospital and Medical Center School of Nursing
  Kansas City
St. Louis City Hospital School of Nursing
  St. Louis
St. Luke's Hospital School of Nursing
  St. Louis

Nebraska

Bryan Memorial Hospital School of Nursing
  Lincoln
Mary Lanning Memorial Hospital School of Nursing
  Hastings
Nebraska Methodist Hospital School of Nursing
  Omaha
West Nebraska General Hospital School of Nursing
  Scottsbluff

New Hampshire

Mary Hitchcock Memorial Hospital School of Nursing
  Hanover

New Jersey

Hackensack Hospital School of Nursing
  Hackensack
Medical Center-Jersey City Hospital School of Nursing
  Jersey City
Mercer Hospital School of Nursing
  Trenton
Newark City Hospital School of Nursing
  Newark
Orange Memorial Hospital School of Nursing
  Orange

New York

Beth Israel Hospital School of Nursing
  New York
Binghamton General Hospital School of Nursing
  Binghamton
Charles S. Wilson Memorial Hospital School of Nursing
  Johnson City
Flushing Hospital and Dispensary School of Nursing
  Flushing
House of the Good Samaritan Hospital School of Nursing
  Watertown
St. Francis Hospital School of Nursing
  Poughkeepsie
St. John's Episcopal Hospital School of Nursing
  Brooklyn

North Carolina

Cabarrus Memorial Hospital School of Nursing
  Concord
Gaston Memorial Hospital School of Nursing
  Gastonia
Memorial Mission Hospital School of Nursing
  Asheville
Rowan Memorial Hospital School of Nursing
  Salisbury

North Dakota

St. Alexius School of Nursing
  Bismarck
St. Andrew's Hospital School of Nursing
  Bottineau

Ohio

Bethesda Hospital School of Nursing
  Zanesville
Huron Road Hospital School of Nursing
  Cleveland
The Jewish Hospital School of Nursing
  Cincinnati

Schools of Nursing, Continued

Ohio, Continued
- Maumee Valley Hospital School of Nursing
  Toledo
- Mercy School of Nursing
  Hamilton
- Toledo Hospital School of Nursing
  Toledo

Oklahoma
- Hillcrest Medical Center School of Nursing
  Tulsa

Oregon
- Emanuel Hospital School of Nursing
  Portland

Pennsylvania
- Chestnut Hill Hospital School of Nursing
  Philadelphia
- Coatesville Hospital School of Nursing
  Coatesville
- Germantown Dispensary and Hospital School of Nursing
  Philadelphia
- Hahnemann Medical College and Hospital School of Nursing
  Philadelphia
- Hospital of the Woman's Medical College School of Nursing
  Philadelphia
- Jefferson Medical College Hospital School of Nursing
  Philadelphia
- Lancaster General Hospital School of Nursing
  Lancaster
- Lankenau Hospital School of Nursing
  Philadelphia
- St. Francis General Hospital School of Nursing
  Pittsburgh
- St. Luke's Hospital School of Nursing
  Bethlehem
- Western Pennsylvania *Hospital School of Nursing*
  Pittsburgh

Puerto Rico
- Damas Hospital School of Nursing
  Ponce

Rhode Island
- Memorial Hospital School of Nursing
  Pawtucket
- Rhode Island Hospital School of Nursing
  Providence

South Carolina
- Greenville General Hospital School of Nursing
  Greenville

South Dakota
- St. John's McNamara Hospital School of Nursing
  Rapid City

Tennessee
- Baptist Memorial Hospital School of Nursing
  Memphis
- City of Memphis Hospitals School of Nursing
  Memphis
- St. Thomas School of Nursing
  Nashville

Texas
- John Peter Smith Hospital School of Nursing
  Fort Worth
- Shannon West Texas Memorial Hospital School of Nursing
  San Angelo

Utah
- St. Benedict's Hospital School of Nursing
  Ogden

Vermont
- Mary Fletcher Hospital School of Nursing
  Burlington

Virginia
- Riverside Hospital School of Nursing
  Newport News

Washington
- St. Joseph's Hospital School of Nursing
  Tacoma

West Virginia
- Wheeling Hospital School of Nursing
  Wheeling

Wisconsin
- Milwaukee County General Hospital School of Nursing
  Milwaukee
- St. Agnes School of Nursing
  Fond du Lac
- St. Mary's School of Nursing
  Wausau

Cooperating Agencies

Alabama
- Children's Hospital of Birmingham
  Birmingham
- Hale Memorial Hospital
  Tuscaloosa
- Veterans Administration Hospital
  Tuscaloosa

California
- Agnews State Hospital
  San Jose

California, Continued
- Children's Hospital of the East Bay
  Oakland
- Mount Zion Hospital and Medical Center
  San Francisco
- Stockton State Hospital
  Stockton
- Veterans Administration Center, Brentwood Hospital
  Los Angeles
- Veterans Administration Hospital
  Palo Alto

Colorado
- Children's Hospital
  - Denver

Connecticut
- Connecticut Valley Hospital
  - Middletown
- Fairfield State Hospital
  - Newtown

Delaware
- Emily P. Bissell Hospital
  - Wilmington

District of Columbia
- Children's Hospital of the District of Columbia
- St. Elizabeths Hospital

Florida
- Florida State Hospital
  - Chattahoochee
- W. T. Edwards Tuberculosis Hospital
  - Tallahassee

Illinois
- Cook County School of Nursing
  - Chicago
- Municipal Tuberculosis Sanitarium
  - Chicago

Indiana
- Dr. Norman M. Beatty Memorial Hospital
  - Westville
- Evansville State Hospital
  - Evansville
- Madison State Hospital
  - Madison
- Sunnyside Sanatorium
  - Indianapolis

Iowa
- Hand Community Hospital
  - Shenandoah
- Mental Health Institute
  - Independence
- St. Bernard's Hospital
  - Council Bluffs
- Veterans Administration Hospital
  - Knoxville

Kentucky
- Central State Hospital
  - Lakeland
- Children's Hospital
  - Louisville
- Eastern State Hospital
  - Lexington

Louisiana
- De Paul Hospital
  - New Orleans

Maryland
- Seton Psychiatric Institute
  - Baltimore

Maryland, Continued
- Spring Grove State Hospital
  - Catonsville

Massachusetts
- Boston City Hospital
  - Boston
- The Boston Floating Hospital for Infants and Children
  - Boston
- Boston Lying-in Hospital
  - Boston
- Boston State Hospital
  - Boston
- Massachusetts Mental Health Center
  - Boston
- Medfield State Hospital
  - Medfield
- Metropolitan State Hospital
  - Waltham
- Worcester State Hospital
  - Worcester

Michigan
- Children's Hospital of Michigan
  - Detroit
- Pontiac State Hospital
  - Pontiac
- Ypsilanti State Hospital
  - Ypsilanti

Minnesota
- Hennepin County General Hospital
  - Minneapolis
- Moose Lake State Hospital
  - Moose Lake

Missouri
- Cardinal Glennon Memorial Hospital for Children
  - St. Louis
- Children's Mercy Hospital
  - Kansas City
- Missouri State Sanatorium
  - Mount Vernon
- St. Louis Children's Hospital
  - St. Louis
- St. Louis State Hospital
  - St. Louis
- St. Vincent's Hospital
  - St. Louis

Nebraska
- Children's Memorial Hospital
  - Omaha
- Hastings State Hospital
  - Ingleside
- Veterans Administration Hospital
  - Omaha

New Hampshire
- New Hampshire Hospital
  - Concord

New Jersey
- Essex County Overbrook Hospital
  - Cedar Grove

Cooperating Agencies, Continued

New Jersey, Continued
- New Jersey State Hospital
  Greystone Park
- New Jersey State Hospital
  Marlboro
- New Jersey State Hospital
  Trenton

New York
- Binghamton State Hospital
  Binghamton
- Central Islip State Hospital
  Central Islip
- Creedmoor State Hospital
  Jamaica
- St. Vincent's Hospital of the City of New York
  Westchester Branch, Harrison

North Carolina
- Dorothea Dix Hospital
  Raleigh

North Dakota
- St. Aloisius Hospital
  Harvey
- St. John's Hospital
  Fargo
- State Hospital
  Jamestown

Ohio
- Children's Hospital
  Cincinnati
- The Children's Hospital
  Columbus
- Children's Hospital of Akron
  Akron
- Dayton State and Receiving Hospital
  Dayton
- Massillon State Hospital
  Massillon
- Rollman Psychiatric Institute
  Cincinnati
- Toledo State and Receiving Hospital
  Toledo

Oklahoma
- Central State Griffin Memorial Hospital
  Norman

Oregon
- Oregon State Hospital
  Salem

Pennsylvania
- Allentown State Hospital
  Allentown

Pennsylvania, Continued
- Children's Hospital of Philadelphia
  Philadelphia
- Eastern Pennsylvania Psychiatric Institute
  Philadelphia
- Henry R. Landis State Hospital
  Philadelphia
- Institute of the Pennsylvania Hospital
  Philadelphia
- Philadelphia State Hospital
  Philadelphia
- The Rehabilitation Center at Philadelphia
  Philadelphia
- Torrance State Hospital
  Torrance
- Veterans Administration Hospital
  Coatesville

Rhode Island
- Charles V. Chapin Hospital
  Providence
- Providence Lying-in Hospital
  Providence
- Rhode Island Medical Center, Institute of Mental Health
  Howard

South Carolina
- South Carolina State Hospital
  Columbia

South Dakota
- Yankton State Hospital
  Yankton

Texas
- San Antonio State Hospital
  San Antonio

Vermont
- Vermont State Hospital
  Waterbury

Washington
- Veterans Administration Hospital
  American Lake

Wisconsin
- Milwaukee Children's Hospital
  Milwaukee
- Milwaukee County Mental Health Center - North Division
  Milwaukee
- Muirdale Sanatorium
  Milwaukee
- St. Mary's Hill Hospital
  Milwaukee
- Winnebago State Hospital
  Winnebago